ILLINOIS

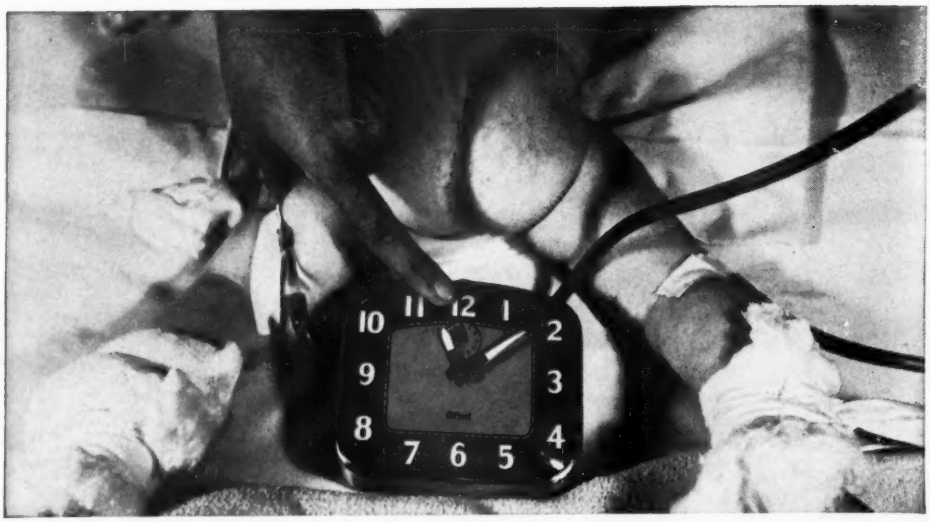
June, 1950

A Priceless Heritage
President's Address

Posterior Lipping Fractures
of the Tibia
Involving the Ankle Mortice

Diet and Pre-Eclampsia

(See page 5 for Table of Contents)



Demonstration[1] of effectiveness of Alidase in promoting absorption of fluid subcutaneously. Hypodermoclyses with saline were started bilaterally and simultaneously, the solution for the *left* thigh contained Alidase.

Ten minutes later the absorption of 250 cc. of fluid was complete in the left thigh, that in the right required 150 minutes. Note absence of swelling on the left, its presence on the right.

ALIDASE* —a highly purified, well-tolerated brand of hyaluronidase—permits hypodermoclysis at intravenous speed. Alidase increases the rate of fluid absorption "twelvefold."[2] Swelling, induration and discomfort are negligible when Alidase is employed.

1. Schwartzman, J.: Scientific exhibit at the American Academy of Pediatrics, San Francisco, Nov. 14-17, 1949.
2. Hechter, O.; Dopkeen, S. K., and Yudell, M. H.: The Clinical Use of Hyaluronidase in Hypodermoclysis, J. Pediat. 30:645 (June) 1947.

*Trademark of G. D. Searle & Co., Chicago 80, Illinois

SEARLE RESEARCH IN THE SERVICE OF MEDICINE

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The ILLINOIS Medical Journal

Official Journal of the Illinois State Medical Society

Harold M. Camp, EDITOR. Theodore R. Van Dellen, ASSOCIATE EDITOR.

EDITORIAL BOARD — James H. Hutton, Chairman, Frederick H. Falls, Josiah J. Moore, Edwin M. Miller, Chauncey C. Maher, Harry Culver, Walter Stevenson, Raymond W. McNealy, Arkell M. Vaughn, Edwin F. Hirsch.

Vol. 97, No. 6 June, 1950

OUR NEW PRESIDENT

Harry Malcome Hedge of Evanston was inducted into the office of President at the closing session of the House of Delegates at the annual meeting in Springfield, May 25. For several years Doctor Hedge was a member of the Council, and served as its chairman when he was elected President-Elect at the 1949 annual meeting.

Doctor Hedge was born at Toledo, Iowa, July 22, 1884, and he was graduated from Northwestern University Medical School in 1917. His undergraduate work was at Northwestern University, where he received the degree of B. S. in 1915. Following his internship at St. Luke's Hospital in Chicago, he served in the Medical Corps of the U. S. Army, serving until the end of the war. From 1917 to 1919, he was Captain, Commanding Motor Ambulance Bn No. 1. He was advanced to the rank of Colonel, MC. AUS, Commanding General Hospital 119.

In 1916-17, he was clinical assistant in pathology at Northwestern University Medical School, and in 1920 in the Department of Dermatology, becoming Assistant Professor of Dermatology in 1931 and Associate Professor in 1950. Doctor Hedge was certified by the American Board of Dermatology and Syphilology in 1933. He has been head of the Department of Dermatology at Wesley Memorial Hospital, Evanston Hospital, and Chicago Memorial Hospital, and Consulting Dermatologist for the United Air Lines.

From 1943 to 1946 Doctor Hedge was Vice-Chairman, Warmanpower Commission, Procurement and Assignment Service for Physicians, remaining in this position until the Service was ended. Doctor Hedge, in addition to membership in the Chicago Medical Society, Illinois State Medical Society, and the American Medical Association, is also a member of many special societies. Among these, Fellow of the American College of Physicians, Institute of Medicine of Chicago, Chicago Dermatological Society, American Academy of Dermatology, and American Association of Military Surgeons.

He is a member of the Board of Health of Evanston, and serves his community well in this capacity. He is also a member of the American Legion, Sons of the American Revolution, and Military Order of World Wars. Doctor Hedge has written many scientific articles which have been published in special journals, as well as in the J. A. M. A. and the Illinois Medical Journal. Likewise, he is the author of DERMATOLOGY: An Elementary Reference For Physicians, which is now being sent to all physicians in this state by the State Department of Public Health.

Doctor Hedge was married to Florence Norman in 1919, and they have three children, Maryirene, Barbara Rose and Harry Paul Hedge.

During the past year, Doctor Hedge has appeared on the program before quite a number of component societies, as well as on several post graduate programs as conducted by the State Society Committee on Post Graduate Service. He has made many appearances before lay audiences, and it is quite obvious that during his year as President of the Illinois State Medical Society, he will visit all parts of the state, meeting many old friends and making new ones.

With the present day socio-economic trends, and the continued efforts to change the basic method of providing medical care, the President of this Society has many duties and obligations which were unheard of only a short time ago. The many friends of Dr. Harry Malcome Hedge are thoroughly convinced that he will do his part in the next year, and carry on in the manner established by his predecessors of recent years.

POLIOMYELITIS

Hart E. Van Riper, M.D.
Medical Director,
National Foundation for Infantile Paralysis

There is concern in some quarters that 1950 may become another record-breaking year for polio epidemics. Unfortunately, there is some justification for those fears in the early reported incidence of the disease — 1388 cases for the first 15 weeks of 1950 — a greater number than for the similar period in 1949 which culminated in the record number of 42,375 cases. However, in a disease whose epidemiology contains many unknown factors, it is impossible to forecast with accuracy the extent of future outbreaks.

Despite the pessimistic outlook, prospects for adequate patient care are better than ever before. This is due mainly to the excellent cooperation of physicians, nurses, physical therapists and hospitals, as well as the voluntary and official agencies in the local communities. The reluctance of general hospitals in the past to admit polio patients is rapidly disappearing and in its place there has come a growing realization of their responsibility to provide the essential requisites for adequate care. Physicians are more alert to the disease and their diagnostic acumen is keener. Professional education programs sponsored by the National Foundation for Infantile Paralysis have resulted in larger numbers of specially trained nurses, physical therapists and other professional personnel mandatory to the highest quality of patient care.

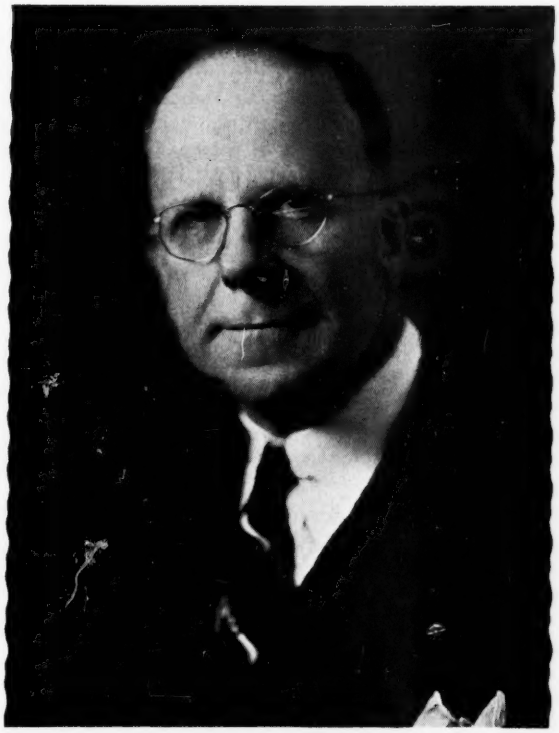
In a disease where specific laboratory aids to diagnosis are still lacking, the responsibility for early diagnosis and the institution of proper treatment falls heavily on the physician. In a broad sense, poliomyelitis is of three classifications — abortive, non-paralytic, and paralytic. Into these general classifications the various types of poliomyelitis can be included, such as spinal, bulbar, and encephalitic. The *abortive* form may be defined as a symptomatically non-specific, mild illness without the clinical signs of central nervous system involvement. The *non-paralytic* type is one in which the clinical signs of central nervous system involvement may appear, but where nerve cell damage is not severe enough to produce paralysis. The *paralytic* type is, of course, the one in which definite paralysis develops.

Most patients with abortive poliomyelitis are never reported as such. From the physician's point of view, although these cases cannot be reported as definitely poliomyelitis, all cases with such mild illness during an epidemic should be regarded with suspicion for it is possible that these patients may go on to develop frank signs of the disease.

In both the non-paralytic and paralytic types there is a wide range of symptoms which usually makes diagnosis difficult. The so-called diphasic form is characterized by a preliminary period of minor illness similar to that seen in the abortive type. The first phase may be followed by a few days of comparative normalcy before the second phase occurs with its more pronounced evidence of central nervous system involvement. Very often these first and second phases are not clear-cut, but overlap and obscure each other. Physicians report that in children under 15 years of age, a clear cut diphasic course is more common than in young adolescents and adults.

Although there are no specific laboratory tests for poliomyelitis as such, spinal fluid examinations are of value. Generally the leukocyte count in the spinal fluid is elevated and the protein content rises. As corroborative evidence in a case where clinical symptoms of frank paralysis are not evident, the spinal fluid examination is essential to verify a diagnosis.

Early hospitalization of paralytic patients in whom a definite diagnosis can be made is highly



Harry M. Hedge, M.D.

President, Illinois State Medical Society

1950-1951

important. General hospitals need not set up special isolation facilities. These hospitals can care for polio patients if routine isolation techniques such as are employed for other contagious diseases are available.

The transmission of poliomyelitis is still largely conjectural and under intense investigation. But there is no scientific evidence to indicate that it may be airborne or water borne. Although in rare instances milk has been suspected as a possible carrier, there is no direct evidence of its culpability. The same is true of the fly. Although the virus has been found on flies, direct scientific evidence linking the fly to actual spread of the disease is still lacking. The bulk of scientific opinion today is that the disease is transmitted from person-to-person through intimate contact of a type that occurs in households. Several surveys completed in the recent past have corroborated this belief.

Whether or not there will be more than the usual number of poliomyelitis cases this summer, the National Foundation for Infantile Paralysis stands ready to meet the needs of any community requesting its aid — whether it be consultation with the health authorities, use of its epidemic aid teams to advise on treatment programs, making available special equipment such as respirators and hot pack machines, or help in securing professional personnel.

More than 2800 local chapters of the National Foundation for Infantile Paralysis serve every community in the United States. These chapters will cooperate with physicians and hospitals so that no polio patient need go without the best available care. The address of a local chapter can be obtained from the telephone directory or local health department. Physicians are urged to acquaint themselves with the services of the chapters and to advise their patients to seek their aid when necessary.

Tuberculosis is preventable and eradicable. In the United States it causes one death every nine minutes. Illinois needs 3000 additional sanitarium beds.

A TALE WITH A MORAL

An excerpt from the proceedings of the Illinois State Medical Society, as preserved in a longhand journal covering the period May 17, 1900, to May 1, 1903.

Richard Yates, son of the Civil War governor of Illinois, was elected governor in November, 1900, and inaugurated January 8, 1901.

At the annual meeting of The Illinois State Medical Society in May, 1900, the House of Delegates had adopted a resolution authorizing the Judicial Council to present to the governor a list of physicians eligible for appointment to the State Board of Health and other offices requiring the services of a physician. The purpose was to raise the quality of medical men chosen for such work. This Council had elected Dr. E. P. Cook of Mendota as chairman and Dr. J. F. Percy of Galesburg as secretary.

December 12, 1900, the Judicial Council met at Springfield. After a long discussion of the injunction laid upon it by the House of Delegates, it was decided to offer the services of the Council to the governor in the capacity of advisors concerning the qualifications of men seeking appointment to medical posts in the state government, rather than to find and offer to the governor a list of names. That same afternoon the Council went to the office of Governor-elect Yates in Springfield, where Dr. C. E. Black of Jacksonville had made an appointment with him.

The yellowing minutes of the fifty-year old proceedings took up the story:

"The members of the Council were introduced to Judge Yates by Dr. Black of Jacksonville. The Governor-Elect received the Council very cordially and said that he was very glad to see physicians taking some practical interest in the affairs of the State of Illinois. The Judge further intimated that if we took a little more interest in the primaries before the elections it would be still better for all concerned.

"Dr. Will was then introduced as our spokesman and was listened to very attentively by Judge Yates."

Dr. O. B. Will of Peoria, designated as spokesman, made the Council's offer.

However, the governor's reply was rather noncommittal. It is recorded as follows:

"I may say, however, without any tendency to undue assumption, that I was born and have always lived in Jacksonville, Morgan County, the

seat of several state institutions and the virtual birth-place of all of them, and have been familiar with their conduct and management all through life, so that I feel that I know the needs of all of them as well as any man in the state.

"I wish to say further, that the Governorship of this State will not be made a mere incident in my political career, but the four years of my prospective administration I shall hope to make, if possible, the most efficient in the conduct of the institutional affairs of the State.

"I shall be in no hurry about making the necessary appointments, with which I feel that you and the body you represent will be abundantly satisfied. Indeed, I may call upon you for the advice tendered.

"I thank you for your visit and bid you good day."

The governor later submitted a list of several dozen names to the Judicial Council, which studied them carefully and rated them through a special committee as to their qualifications for office. The record does not indicate how many of the Society's recommendations were actually accepted by the governor.

However, it has taken fifty years for the individual members of the medical profession of Illinois to accept the advice of the astute politician who met with them that winter day in Springfield and warned them that "it would be better for all concerned" if the medical profession took a little more interest in politics. So perhaps, if the governor disregarded the instructions, he was only matching the complete disregard of his main interest in life manifested by the medical men.

And who could blame him?

The last page of the 172-page journal, after chronicling and approving the council's total expenses for 1902-1903 of $223.82, re-echoes the "alerte" sounded on the first page in these words:

"This is the first Judicial Council that has kept an accurate and full record of its proceedings. It is also the first Council that has interested itself in a practical way in the many questions that have come before it from the State Society, and that have never let up until something was really accomplished.

"Hereafter, and under the new constitution adopted at this meeting, the name of this committee will be the "Council."

"J. F. Percy, Secretary Judicial Council, Galesburg, Illinois, May, 1903."

The moral? Do you need to be told?

FIND CHLOROMYCETIN EFFECTIVE AGAINST TULAREMIA

Successful treatment of six cases of tularemia, also known as rabbit fever, with chloromycetin, one of the newer antibiotic drugs, is reported by a group of doctors from the University of Maryland School of Medicine, Baltimore.

The disease is acquired from wild rabbits and other wild animals and insects. It occurs as a local skin lesion and as a generalized infection with fever.

The doctors—Robert T. Parker, Robert E. Bauer, Howard E. Hall and Theodore E. Woodward—and Leonard M. Lister, a medical student, describe their findings in the May 6 Journal of the American Medical Association.

Both streptomycin and aureomycin previously have been shown to be valuable in treating tularemia.

CORRESPONDENCE

SHORT COURSE IN POLIO

A short course in polio for physicians will be held at Northwestern University on July 5, 6 and 7, sponsored jointly by the National Foundation for Infantile Paralysis and Northwestern University. Physicians who are interested in taking this course may apply to: Miss Gertrude Beard, Department of Physical Medicine, Northwestern University Medical School, 303 E. Chicago Avenue, Chicago 11, Illinois.

As in the past, local National Foundation Chapters in the Illinois Counties may underwrite the costs for a limited number of physicians desiring to take this course. In as much as the 1949 polio epidemic in Illinois has placed a tremendous financial burden on the majority of County Chapters, the funds available are necessarily small. Therefore, the number of physicians sent by any one Chapter, if any, will be based largely upon available funds, coupled with the polio needs of the area.

ADMISSION POLICIES AT RESEARCH AND EDUCATIONAL HOSPITAL

In response to inquiries from members of the Illinois State Medical Society regarding the University of Illinois' policy governing admission of patients to its Research and Education Hospitals in Chicago, the following information is summarized for their information.

The Research and Educational Hospitals are operated and maintained by the University of Illinois for the advancement of medical education and research. They are the teaching hospitals of the Colleges of Medicine, Dentistry, and Pharmacy. Admission policies are therefore based primarily on the teaching or investigative interest of each case. This is determined individually by the respective departments on the basis of medical information submitted *by the referring physician* and our examination of the patient. Citizenship, residence in the State of Illinois, and eligibility for charitable services are pre-requisites for admission.

The hospitals offer two types of service—Inpatient and Outpatient (Clinic). The University reserves the right to assign patients to either, depending on individual need and available facilities. The teaching program limits the number of cases of any one particular type which may be accepted during a given period. The period of hospitalization is necessarily limited and patients are discharged at the discretion of the department to which they are assigned.

Application for admission of a patient should be addressed to the Director of Admissions and accompanied by a letter from the attending physician stating the name, age, sex of applicant, history of present complaints, clinical and laboratory findings, impression or diagnosis. The referring physician should also state whether the

patient's condition will permit use of the Outpatient Service, which normally requires several visits to complete diagnostic procedures and therapy.

Medical services are provided free of charge. Certain charges have been authorized by the Board of Trustees. However, it should be emphasized that no restriction is placed on the admission of patients without charge when such admission is otherwise indicated. All charges are computed at cost and assessed in accordance with the patient's ability to pay. Benefits available under any hospitalization insurance plan carried by the patient are assignable to the hospital. Charges apply to patients eligible for or receiving financial assistance from public or private welfare agencies whose policies provide payment of hospital costs. They apply alike to Clinic and Hospital patients and cover registration, laboratory service, drugs, x-rays, special appliances, hospital care per diem, and other costs. The schedule of charges is available upon request.

Physicians are advised *not* to bring or send patients for hospitalization or clinic care unless *prior appointment* has been arranged through the Office of the Director of Admissions. The Hospital Social Service is available to assist patients with special problems.

Both the inpatient and outpatient services have been taxed beyond capacity in recent years. During 1949, a total of 7,300 patients received bed care. Visits to the University's 24 outpatient clinics numbered 190,346 during the past year, which is the largest total handled by any institution or hospital in Illinois.

Despite the large number of patients accommodated, the University has been forced to reject the applications of more than 100 clinic and bed patients daily because of inadequate facilities. There are only 39 beds available for general surgery and 63 beds for general medicine. Service facilities are used to full capacity, and all departments maintain hospital waiting lists.

This situation is expected to be eased somewhat, however, with the construction of a 411-bed addition to the Research and Educational Hospitals. The building is expected to be completed in the fall of 1951.

REFRESHER COURSE IN OBSTETRICS

A one week refresher course in obstetrics and gynecology sponsored by the Illinois State Medical Society, the State Department of Public Health, and the University of Illinois will be given at the Research and Educational Hospital beginning July 17, 1950. It will consist of formal lectures, clinical conferences, round table discussions, manikin demonstrations, ward walks, and out-patient clinics. The staff of the Research and Educational Hospital plus invited lecturers from Northwestern University, Loyola University and the University of Chicago will give the course.

The program will occupy the time from 9:00 to 5:00 daily. The course will not be given for less than 10 men. Registration closes Saturday, July 8th. Registration fee $10. Accommodations for room and board can be arranged at the nearby Professional Schools Y.M.C.A.

Apply for registration in course to Dr. F. H. Falls, 1853 West Polk Street, Chicago 12, Illinois.

"YOUR MENTAL HOSPITALS" MENTAL HEALTH WEEK IN ILLINOIS

Under proclamation of the Governor, Mental Health Week was observed in Illinois during the period of April 23 to 29, 1950, through the cooperative efforts of the Illinois Department of Public Welfare, Illinois Society for Mental Hygiene, Illinois State Medical Society, Illinois Department of Public Health, United States Public Health Service and others.

It was hoped that Mental Health Week would create an awareness and an understanding, as well as an appreciation, of the magnitude of the problem of care and treatment of the mentally ill. Special programs were held and radio presentations were made. Placards on street cars in several cities, a large electric sign on Michigan Avenue in Chicago, and numerous articles in the daily newspapers throughout the State helped to draw the attention of the public to this Week.

Open House was held on Sunday, April 23, 1950, in thirteen Illinois State Mental Hospitals. Thousands of visitors throughout the length and breadth of the State, from Elgin to Anna and from Kankakee to East Moline, saw the fine exhibits that filled the auditoriums of these hospitals, participated in the programs, and were con-

ducted on tours through various wards. They received a clear and concise knowledge of the activities carried on within these fine institutions.

Each State Mental Hospital chose their three outstanding employees of the year and presented them with special awards. Out of the 8400 employees in the thirteen hospitals, thirty-eight employees were chosen by the institutions. From this group of thirty-eight, three were selected to receive the Governor's award. The Governor's award of $250.00 was given to the outstanding employee of the mental hospitals for the entire State of Illinois at a luncheon held in Springfield on April 25, 1950. The second award of $100.00 and a third award of $50.00 were also made.

Mrs. Harriett T. Larson, who is a hospital attendant at the Lincoln State School and Colony, was selected as the outstanding employee of the year in the mental institutions in the State of Illinois. She was assigned to a ward in which resided the most difficult patients in the institution. They ranged from young adults to senile women, all of them problem cases. They were destructive, untidy, combative and frequently violent. Mrs. Larson volunteered to work on this ward in an attempt to rehabilitate what had been considered a hopeless task. In a period of one year, the results were amazing. She chose the most alert patients to look after the more helpless ones. She studied the patients individually and used recreational therapy according to their talents and abilities. At the present time, all the patients wear clothes and almost no sedation is required. They all say grace at meals, sit on chairs and benches instead of lying about on the floor, and show an interest in the world about them. Mrs. Larson went into a job that seemed helpless and stuck to it in spite of many handicaps. She has, without a doubt, performed a task which seemed almost impossible.

The winner of the second award was Mrs. Ethel Mills of the Chicago State Hospital, and the third Governor's award went to Mr. Anton Svanda of the Illinois Security Hospital.

In addition to the above awards, a certificate of honorable mention went to Mrs. Margaret Schrader of the Peoria State Hospital as one of the five outstanding Psychiatric Aides of the Nation chosen by the National Mental Health Foundation out of 22,000 psychiatric aides.

Mental Health is everyone's problem and it is hoped that the observation of this special week did increase the knowledge and stimulate the interest of many.

G. A. WILTRAKIS, M.D.
Deputy Director

INDUSTRIAL DOCTORS INVITE YOU TO MEETING

The Western Association of Industrial Physicians and Surgeons invites all American Medical Association members to attend its meeting on Sunday, June 25th, 1950 (the day prior to the opening of the A.M.A. convention), from 9:00 A.M. to 5:00 P.M., in the Curran Theater, 455 Geary Street, San Francisco. The program includes: Tetanus Prophylaxis in Previously Immunized Persons, Rodney R. Beard, M.D.; Medical Administrative Problems in Workmen's Compensation Cases, a panel; A Rest Regime for Acute Back Sprain, Christopher Legg, M.D. and Harry W. Walker, M.D.; Psychosis, a Side Door out of Industry, Frank Tallman, M.D.; and Job Placement in the Rehabilitation of Alcoholics, a panel.

ARMY CIVILIAN INTERN PROGRAM

A number of positions are still available in the Army Medical Department's civilian intern program, according to an announcement from the Army Medical Department.

Applications are continuing to come in and selections are being made weekly. Interested individuals should submit their applications as soon as possible to insure that their cases will receive consideration.

The recent adoption of uniform service standards for medical interns in the Armed Forces makes no change in the Army program. Service standards are:

(1) Army internship served in a military hospital; one year of further active duty in addition to each year of internship.
(2) Army internship served in a civilian hospital; two years of further active duty in addition to one year of internship.

To be eligible for this year's program, a candidate must be a potential graduate who will begin an internship during 1950, and must have been accepted for internship training in a civilian hospital acceptable to the Surgeon General.

Individuals who previously submitted appli-

cations for internship in an Army hospital and who were not tendered appointments may apply for the civilian program simply by completing two short forms. A new physical examination will not be required at this time.

New applicants must file the complete set of forms, which may be obtained at any medical ROTC office or directly from the Surgeon General of the Army.

Army interns in civilian hospitals must satisfactorily complete eight months of internship to become eligible to participate in the professional examinations leading to appointment in the Regular Army.

CLINICS FOR CRIPPLED CHILDREN FOR JULY

Doctor Herbert R. Kobes, director of the University of Illinois Division of Services for Crippled Children, has released the July schedule of clinics for physically handicapped children. The Division will conduct 17 general clinics providing diagnostic orthopedic, pediatric, speech and hearing examinations along with medical social and nursing services. There will be 4 special clinics for children with rheumatic fever and 1 for cerebral palsied children.

Clinics are held by the Division in cooperation with local medical and health organizations, both public and private. Clinicians are selected among private physicians who are certified Board members. Any private physician may refer or bring to a convenient clinic any child or children for whom he may want examination or may want to receive consultative services.

The July clinics are:

July 5—Joliet, Will Co. TB Sanitarium
July 6—Cairo, Public Health Building
July 11—Peoria, St. Francis Hospital
July 11—E. St. Louis, St. Mary's Hospital
July 12—Hinsdale, Hinsdale Sanitarium
July 13—Springfield, St. John's Hospital
July 13—Elmhurst (Rheumatic Fever), Memorial Hospital of DuPage County
July 13—Salem, American Legion Hall
July 14—Chicago Heights (Rheumatic Fever), St. James Hospital
July 18—Danville, Lake View Hospital
July 18—Carrollton, Baptist Church
July 19—Springfield (Cerebral Palsy), Memorial Hospital
July 19—Elgin, Sherman Hospital
July 19—Sterling, Sterling Public Hospital
July 20—Rockford, St. Anthony's Hospital
July 20—Mt. Vernon, Masonic Temple
July 25—Peoria, St. Francis Hospital
July 25—Effingham (Rheumatic Fever), St. Anthony's Emergency Hospital
July 26—Chicago Heights, St. James Hospital
July 26—Alton, Alton Memorial Hospital
July 27—Bloomington, St. Joseph's Hospital
July 28—Chicago Heights (Rheumatic Fever), St. James

CONSERVATION, NUTRITION AND HEALTH

Friends of the Land will hold its ninth annual Institute on Conservation, Nutrition and Health at the Stevens Hotel, Chicago, July 6-7. Theme of the program will be "Soil, the Cradle of Life."

The program will conclude with a symposium on soil-health relationships, with Grant H. Laing, Northwestern University Medical School, presiding; other participants will be R. V. Allison, University of Florida, Soil Nutrients and the Health of the Plant; George K. Davis, University of Florida, Soil Nutrients and the Health of Domestic and Wild Animals; Henry Trautman, Madison, Wis., Soil Nutrients and the Health of Man. The session will end with Dr. Jonathan Forman presenting a summary of the proceedings of the institute. Registration fee for the institute will be $5.00. The dinner tickets will be $4.50. Advance registration may be made with Friends of the Land, 1368 North High Street, Columbus 1, Ohio. Physicians and others interested are invited to attend.

ORIGINAL ARTICLES

The Practice of Medicine -- A Priceless Heritage

Walter Stevenson, M.D., F.A.C.S., F.I.C.S.
Quincy

The profession of medicine constitutes a priceless heritage. It means much more than the acquisition of certain knowledge and certain skills. It encompasses a great ideal of service to humanity and of selfless devotion to that ideal. It is an ideal which we inherited from our teachers and which it is our duty to pass on to our successors, unsullied and unimpaired. It is an entailed heritage; it must not be alienated out of the legitimate line.

But, speaking here to you for the last time as your president, I would also like to point out to you that there is a vast difference between on the one hand the concept of medicine as a profession and of the God-given privilege of being a physician and on the other the right to practice medicine. The right to practice medicine is conferred on us by the state. It implies that the recipient meets certain standards of training and is intended for the protection of the public against inadequately trained practitioners. No one questions that it is proper for the state to assume such a power.

However, that power also implies the power to remove or limit the right conferred on us, in case we are considered not to live up to our correlative responsibilities. And at the same time, the accepted principle of state regulation, by extension, may easily be taken to include the social and economic as well as the professional phases of the practice of medicine. The pressure for just such extension of the principle of state control in the economic sphere, on the basis of just such trumped-up charges constitutes the present threat to our professional heritage and obversely the most important phase of the pressure is, not its menace to medical men or their patients as such, but its menace to that professional ideal and thus to human welfare.

It is that threat to our great, priceless professional heritage which is posed by government interference in the economic phase of health care, that I desire to discuss with you today.

Extension of government regulation from the socio-economic to the professional sphere must

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Presidential Address Delivered at the Annual Meeting of the Illinois State Medical Society, Springfield, Ill., May 23, 1950.

be and is being fought by organized medicine with every resource at its command. And, I think, there are few individual medical men who do not agree with that general position of the medical profession. Nearly all of us, in other words, realize that, if the blighting hand of government clamps down on the practice of medicine, our professional ideal — the priceless heritage of our calling — will be irreparably shattered, with resultant irreparable harm to our nation, our patients, our profession and ourselves.

But how many of us have put that realization into words and deeds? There has never been a period in modern medicine when we were under such bitter attack, but how many of us are content to contribute a little money to the fight and let the other fellow do the fighting?

Look into your own hearts for the answers to those questions. I think you will find — and this is what I feel clamors for expression here today — that many good men of medicine, though conscious of their devotion to their professional ideals as far as the immediate care of patients goes, have been failing in that broader duty of supporting with equal aggressiveness the fight to protect those ideals.

Let us consider for a moment certain phases of the attitudes of the ordinary layman toward medicine. First, he does not know much about it. Despite all our educational effort, he is often still ignorant of the whys and wherefores of disease, even of the simplest details of the anatomy and physiology of his own body. Many of the new developments in medicine, publicized as an educational step, become merely channels by which conscienceless men sell him panaceas and nostrums because he does not understand himself. That is well illustrated by the antihistamine drugs for which he is paying millions of dollars despite even specific warnings from medical men. Thus he is a ready victim for any mullah who promises him freedom from disease, especially "free".

Second, medical care costs money. I do not mean that it is always expensive, but it takes funds that might be spent positively for the acquisition of the pleasant things of modern living instead of negatively for the elimination of illness. That is an unpleasant situation to confront and it is human nature to evade such issues as long as possible. Thus there is always the appeal to human selfishness, particularly in these days when so many of our citizens have fallen away from that basic injunction of Genesis — that "in the sweat of thy face shalt thou eat bread." We are still not back in the Garden of Eden and that injunction still stands, but many of our people have forgotten it and think they can get something for nothing.

Third, I believe that there are what I might call inherited or "congenital" public attitudes which are responsible for much antagonism, just as they explain in part the acceptance by many laymen of so-called "drugless healing" and the position of such otherwise fine groups as the Christian Scientists in rejecting orthodox medicine.

Once upon a time the calomel-and-quinine school of medicine, for instance, stirred public resistance to medicine as it was then, and that rejection has become fixed in the minds of a part of the general public. That type of medicine, the best we could do before the rise of modern medicine, has long since been eliminated, but the attitude of antagonism and rejection it created in the lay mind is still with us. We are thus opposed, not by a conscious, reasoned opposition to medical techniques, but by that vague, inherited attitude toward medicine, to which our enemies and the enemies of our country's welfare may appeal.

And fourth, the physician in the abstract is associated with tragedy or disaster, with pain, illness and death. I am sure you have all seen illustrations of that attitude in the emotional rejection of medicine, for instance, by children who have watched a parent die lingeringly of incurable disease and have taken out their frustration in criticism of the medical profession.

It is within these groups—the ignorant, the greedy, the unthinking and the emotionally warped individuals, that the propaganda for government enslavement of medicine finds its most fertile soil. All the Socialist propagandists need do—and you have all heard it done—is to develop a series of pejorative references to medicine which tie in with the distorted prejudices of these antagonistic groups and they build up their list of supporters.

But there is still a fifth phase of the public attitude toward medicine which is important to

us—the attitude of the *individual* layman toward the *individual* physician. In contrast to the horrendous Dr. Hyde which is medicine in the abstract, there is always Dr. Jekyll, the benign side of the character. Out of direct personal contact with today's well-trained, competent, devoted, sympathetic physician, ready and willing to serve, most people have a kindly feeling toward that physician as one concrete specific person, entirely different and apart from the vague monstrosity known as "organized medicine." He is the personification of help in time of need, of security against disease and injury, the benignant deus ex machina. They love him and, what is more, they trust him.

A clearcut demonstration is easy. Ask the ordinary layman what he thinks of socialized medicine and, unless he has been informed properly, he is likely to reply that it might be all right or that he favors it. That is the attitude toward "medicine" in the abstract. But ask the same individual what he thinks of his own personal physician and whether he wants that physician subjected to political control in his relationship with himself as a patient, and you will uncover startled and dynamic opposition and set off loud cries that something be done. That is the attitude toward the "physician" in person.

This distinction is important. Aside from explaining much of the criticism of medicine, especially "organized medicine" and the inconsistencies of public opinion, it is just about the only position we had left to us, from which to organize our defense against Socialization. By emphasizing the individual "physician," we can overwhelm the antagonism engendered against the abstract idea of "medicine." That is why it is necessary to cement and strengthen that individual relationship by such devices as grievance committees, night call systems and more careful and considerate treatment of patients.

And that is why the Illinois State Medical Society, in laying out its program for combatting socialization, has placed its trust in a campaign by which individual physicians talk personally to patients—either in groups at luncheons, dinners and meetings, or, one at a time in professional and personal contacts.

That the decision is sound has been borne out by the fact that most requests for speakers on socialized medicine specify physicians, contrary to early expectations. When it comes to discussions of how medical care is to be administered, the layman wants a physician's opinion. Because of the achievements of the volunteers who serve in our speakers' bureau, public sentiment in Illinois, with the exception of a few areas, is overwhelmingly opposed already to socialization. For myself I would not fear to face a general referendum among the voters of Illinois tomorrow. And the fact that the administration in Washington has been extremely chary of the whole subject, despite its imaginary "mandate" for the welfare state in November, 1948, suggests strongly that a similar state of public opinion prevails throughout the nation.

That attitude of the individual patient toward the individual doctor goes back to the physician's adherence to his professional ideals. It reflects the patient's appreciation of the physician's resultant devotion to duty as far as the care of his patient goes.

One of the most vivid realizations that has come to me during my term as president has been the great influence over public thinking, exercisable by the individual physician because of this patient attitude and the usual physician's failure to appreciate and use that influence.

And that brings me back to my original question! How many of us, no matter how sure of our loyalty at the patient level, are sufficiently devoted to our professional ideals as to give full energy to defending them in the national arena?

I am not discussing here the need for combatting Socialism to the death, which is also our duty as good Americans. I am talking only of our duty to defend and pass on to those who come after us the priceless heritage of the profession of medicine. Not everyone of us can sway great audiences with flights of oratory, but every one of us can make and seize every possible opportunity to bring home the message of freedom to our individual patients, their families and friends, to our friends and acquaintances in club, lodge, church or other social contact, to lend his financial support and vote to the programs as an individual and as a member of a medical society, to the programs outlined by our leaders.

The physician who fails in this duty — and I say this as a solemn warning as emphatically

as I can phrase it — is as derelict in his duty to his heritage as the man who would fail to give a patient his best efforts. And only by participating to the full extent of his power in this individualistic fight to protect economic and social freedom in medicine can he claim to be doing his full share in the deeper, more significant fight, to preserve and transmit undiminished the priceless heritage committed to him in his generation.

These thoughts on the ideals of medical service and the need for preserving them have been in part stirred by, and are particularly appropriate to, the theme of this 1950 annual meeting of the Illinois State Medical Society, for we have named this our "Andy Hall Meeting." It is the first of our 110 meetings which we have designated to honor a single living individual.

We have taken this unprecedented step in honor of our esteemed colleague, Dr. Andy Hall of Mt. Vernon, a medical practitioner in Illinois for 60 years who last December was chosen from among 35 candidates from various states the nation's outstanding general practitioner. No more deserving physician could have been so signally honored and Illinois is proud and gratified to number him among its great men henceforth and forever. Dr. Hall expresses in his professional career the devotion to medical ideals and to medical freedom which I have so feebly tried here to establish as a rule and guide for all of us. I know no better exemplification of the ideal physician than Dr. Andy Hall. And at this point in my address as president I congratulate him formally in the name of the Illinois State Medical Society on his whole life and professional career and on his great achievement in winning this award. I thank him most earnestly for the great honor he has reflected on all of us and our state and even more for the inspiration his peerless career has been to all of us. And I express from my heart the hope that he will long be with us as further light and inspiration, as teacher and as the vivid embodiment of all that is holy and right in the profession of medicine.

As far down as you can dig in the sands of Mesopotamia you go though stratum after stratum of buried civilizations, each coming out of a long period of darkness, developing a culture all its own, dying, and allowing the world to return to another period of darkness from which another civilization with a new and different culture would arise. From each bright period of cultural development, the spark of medical service has been tenderly guarded by priestly hands to make a feeble glow through the age of darkness following, being fanned again and again into a bright flame with each cultural renaissance.

This carefully nourished light of self-effacing service, the tradition of professional devotion, is of more value to humanity than all the trappings of science that the last generation or so has added to it. It was not the writings of Galen, but the Roman doctors, who fought the Great Plague in Rome, when the book-writing Galen the Pergamian had fled. This tradition of sacrifice held the doctor firmly in the line of duty during the multiple epidemics of the Middle Ages — through the Plague and the Pest, through the Red Death and the Black Death, through the Sweating Sickness and the Dancing Sickness. Each dreaded disease decimated his ranks, but each return of the creeping death found the doctor ready to combat it.

There were the traditions of medicine at the beginning of the development of this Golden Age, traditions of hard work and self-sacrificing service, of courage in the face of danger — and to this our present age of culture has added a knowledge and understanding of medicine greater than the world has ever known before.

When I took office as your President, I said to you then that I was proud of my profession, that I was proud to be a member of the medical fraternity, that I had always been so proud of it and always expected to be. I have in the last year found new reason for such pride. And, as I give you this my parting salute, I humbly thank you for the honor you have conferred on me and the privilege you have given me of serving you.

Let us as a modern profession be unafraid of the future. No matter what may happen from a legislative standpoint, we will still be doctors of medicine ready to serve our fellow man. That was the oath that we took when we graduated and we will all stand true to that promise. Doctors will always be needed to alleviate pain and comfort those who suffer. So let us fight on, not for the selfish reason of preserving our own

status quo, but that we may continue on and on with the scientific research and progress that enable us to render better and better medical care for those in need. Let us, in other words, maintain, renew, intensify our devotion to our ideals and to our priceless heritage.

Let it be our daily prayer that, when we take that journey from which no traveler returns, it will be with the full knowledge and confidence that we have fought the good fight for what we know to be right and that the heaven every physician earns, can be only an eternal continuation of the service to his fellows which it is our ceaseless endeavor to give on earth.

Posterior Lipping Fractures of the Tibia Involving the Ankle Mortice.

Etiology, Pathology and Treatment

Carlo Scuderi, M.D., F.A.C.S., and Edward L. Schrey, M.D.
Chicago

Posterior lipping fractures of the tibia with a posterior dislocation of the astragalus are relatively common fractures in large civilian and industrial centers. In practically all cases both the external and internal malleoli of the ankle are broken and displaced. Usually the internal malleolus has a marked displacement, while the external malleolus has very little displacement.

Unless these cases are seen early and accurate reapposition of the fragments obtained, a rapidly progressive osteo-arthritis results in the ankle mortice with a painful ankle, and inability to bear weight. Once this has occurred an ankle fusion is necessary and is the only solution for obtaining a painless joint for weight bearing. From both a civilian and industrial standpoint an ankle fusion carries a very substantial specific loss of use of the leg.

Etiology.—Cotton of Boston was probably one of the first men to describe this particular fracture in detail, and for this reason many men recognize this fracture as a "Cotton fracture". In view of the fact that both the internal and external malleoli are usually fractured in association with the posterior lip of the tibia, this fracture is commonly known at the present time as the "tri-malleolar fracture".

This type of fracture is produced by a violence thrown on the long axis of the leg with the foot in the equinus position. This usually occurs when the heel catches as when a person goes down stairs or steps off of a bus or streetcar. The entire weight of the body plus the impetus of the fall is sufficient to produce the tri-malleolar fracture. The present vogue of high heels in women's shoes accounts for the higher incident of this type of fracture in this sex.

The posterior marginal fracture may be produced in one of the two following ways:-

1. With the foot in the equinus position, abduction produces a fracture of the external malleolus. The ligaments on the medial aspect of the ankle become taught and avulse the internal malleolus. With both malleoli broken and the force continuing, the astragalus is brought to bear against the posterior lip of the tibia and a piece of variable size is broken off. The astragalus now moves into a posterior dislocation and comes to rest between the posterior aspect of the tibia and the posterior lipping

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From the Fracture Service — Cook County Hospital Department of Surgery — University of Illinois.

Presented before the General Assembly, 109th Annual Meeting, Illinois State Medical Society, May 16, 1949.

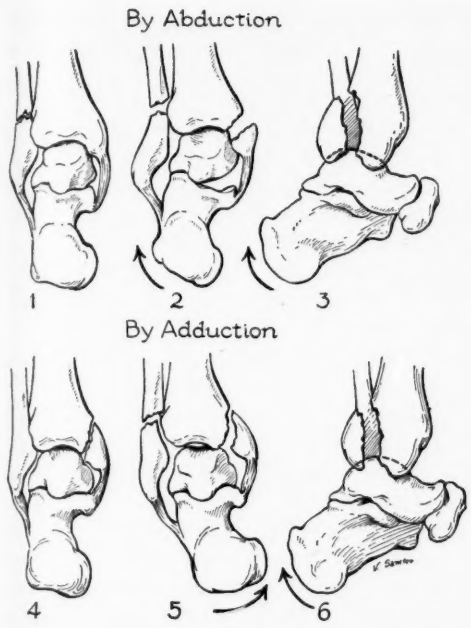

Figure 1. Illustrations 1, 2, and 3 show the production of the posterior lipping fracture by abduction. (1) Abduction produces a fracture of the external malleolus. (2) The internal malleolus becomes avulsed by ligamentous pull. (3) All the force now is thrown against the posterior lip of the tibia by the astragalus. As the lip breaks off the astragalus goes into a posterior dislocation.

Illustrations 4, 5, and 6 show the production of the posterior lipping fracture by adduction. (4) The internal malleolus becomes fractured by the adduction pressure of the astragalus. (5) The continuation of the force into adduction breaks off the external malleolus. (6) The final stage in the pathology, the posterior lip of the tibia is displaced posteriorly and the astragalus goes into a posterior dislocation.

fracture, with a complete disruption of the ankle mortice. (Figure 1 — 1, 2, 3)

2. With the foot in the equinus position, adduction produces a fracture of the internal malleolus by direct pressure of the astragalus. The continuation of the force produces a fracture of the external malleolus. Again as in the adduction mechanism the astragalus is brought to bear against the posterior lip of the tibia and a piece of variable size is broken off. (Figure 1 — 4, 5, 6)

Pathology.—In view of the fact that a considerable amount of violence is necessary to produce a fracture-dislocation of the ankle, the associated soft tissue injury especially to the ligaments must be considerable. When both the external and internal malleoli are fractured and displaced with the dislocated astragalus, the ligaments on the medial and lateral aspects of the ankle remain intact, and only the ligaments and capsule to the front of the tibial astragaloid joint are torn. The ligaments and capsule on the posterior aspect of the ankle remain intact as the fractured posterior lip of the tibia with the intact posterior capsule and astragalus all slide posteriorly in one mass.

Occasionally one sees an isolated fracture of the posterior lip of the tibia without fractures of the external or internal malleoli, but this is indeed a rarity. When this does occur a very severe injury to the ligaments and capsule of the ankle results and then the soft tissue injuries constitute the major pathology. In order for the astragalus to be displaced posteriorly with the posterior lip of the tibia, the ligaments on the medial and lateral aspect of the ankle must be torn loose from their bony attachments, or they must be ruptured by the causative force. In addition the capsule and ligamentous structures on the front of the ankle mortice must be torn or ruptured.

The fracture of the external malleolus usually is of an oblique or spiral type and has never, as far as we can recall, failed to unite by a solid bony union. The internal malleolus, on the other hand, has given rise to a non-union in approximately 35% of cases. This is directly the result of three factors. First, the fragment frequently is associated with considerable displacement so that there is a failure of bone contact. Second, in some instances a flap of periosteum drops between the fragments and union is prevented because of soft tissue interposition. Third, the main source of blood supply to the internal malleolus is from its base, and the fracture disrupts the flow of nutrition to this area.

The posterior lipping fracture of the tibia may be of variable size. Occasionally it is only a small sliver of bone, but in the majority of cases between 20% and 40% of the weight bearing surface is broken off. Only the latter cases require open reduction with internal fixation. Never have we observed a comminuted posterior lipping fracture. The posterior lip breaks off in one solid fragment. Occasionally small pieces of the cortex are broken off and prevent the accurate reapposition of the posterior lip of the

tibia to the main fragment. In such instances, the small fragment of cortex must be removed. On no occasion have we ever observed soft tissue interposition in this area.

The hematoma organizes rapidly and the resulting fibrous tissue solidifies in a relatively short period of time so that unless the case is operated early, accurate reapposition of the fragment becomes very difficult.

Contractures of the soft tissue especially the tendon of Achilles and the gastrocnemius muscle occurs rapidly and after seven to ten days this single factor is difficult to overcome.

Treatment. — The treatment of this specific fracture is divided into two very distinct and separate groups depending first on the bone pathology, and secondly on the time element.

The early cases are those seen, diagnosed and adequate treatment rendered under the first five to seven days. In these cases with an anatomical reduction of the weight bearing portion of the tibia, a very good end result can be anticipated with a moveable and painless ankle on weight bearing.

Occasionally the posterior lipping fracture of the lower end of the tibia is very small and does not involve the actual weight bearing portion of the tibia. In these cases, the reduction of the dislocated astragalus and restoration of the normal relationship between the external and internal malleoli with the astragalus plus immobilization in plaster, is all that is necessary. The small posterior lipping fracture fragment is left wherever it comes to rest. Some posterior and upward displacement of this fragment has no clinical significance.

When the posterior lipping fragment constitutes 20% to 40% of the tibial weight bearing portion, however, an early operative intervention with anatomical reduction and internal fixation is imperative if a useful ankle joint is to be hoped for. Unless a smooth articulation of the lower end of the tibia is obtained, a traumatic arthritis develops with associated pain, swelling and eventual complete loss of voluntary weight bearing. These cases all require an ankle fusion to eliminate the element of pain.

Up until 1942, one of the authors (Carlo Scuderi) attempted every known method of closed reduction with a uniformly high incidence of disastrous results. Since that time all cases which fall into the above catagory have been treated by open reduction and internal fixation. Twenty-eight cases have been operated by the authors during the last seven years with uniformly good results.

The late cases are those that are first seen weeks after the original injury with a persistence of the dislocation of the astragalus and the displacement of a large posterior lip fragment. Traumatic arthritis rapidly develops with the associated manifestations which eventually make weight bearing impossible. Immediate ankle fusion is recommended in all these cases as a satisfactory weight bearing ankle can only result by eliminating the disrupted ankle mortice.

If surgery is indicated, the leg is kept elevated on a Thomas splint to a height of ten to fourteen inches, and an elastic bandage is applied from the toes to the knee. This is done to reduce the edema of the leg while preparations are being made for surgery. It is best to reduce the dislocation of the foot under anesthesia and apply a posterior molded cast for immobilization if this has not already been done by the time the case is seen by the surgeon who is to do the open reduction.

The day prior to surgery the leg is prepared by shaving, trimming the toe nails short, and washing the leg from the toes to the knee with soap and water for ten minutes. This is followed by alcohol and ether sponging and a sterile towel is used to cover the operative area.

The next day when the patient is asleep on the operating table, a Martin constrictor is applied to the leg to give an avascular field. This is most important as good visibility during the operation is probably one of the cardinal factors to an accurate reduction of the fragments. In order to avoid the binding down of the gastrocnemius muscle and tendon of Achilles, the constrictor is always circularized at the lower third of the thigh. The leg is then again washed for ten minutes with soap and water followed by alcohol, ether and a mercureal antiseptic. Methiolate or mercresen have been our preference.

The position of the patient on the table is also important. The patient is placed in the prone position with the feet just beyond the edge of the table, so that by gravity alone the foot tends to return to its normal position.

The draping must be done so that the foot and lower half of the leg are visible.

A five to six inch incision is then made in the

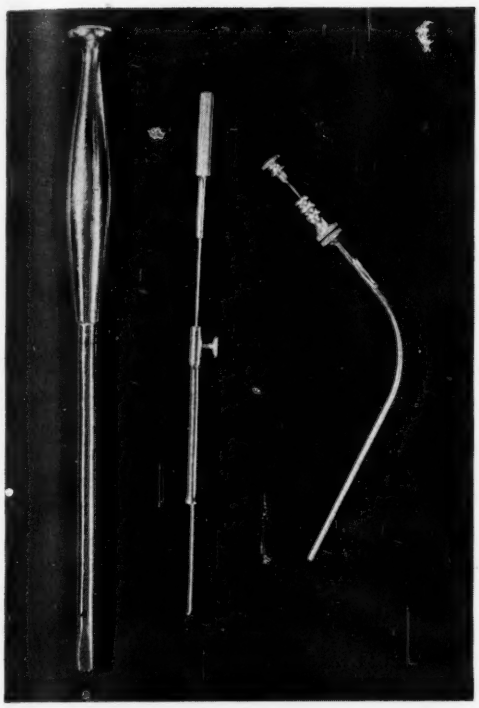

Figure 2. Three almost indispensable instruments in the surgical repair of this fracture. Left to right — Schrey pressure bar; Jackson depth gauge; Frazier aspirator.

longitudinal axis just medial to the tendon of Achilles, and extending down to the upper margin of the os calcis.

The posterior tibial vessels and nerve are now isolated and retracted medially while the tendon of Achilles is retracted laterally. The tendon and muscle of the flexor hallucis longus is now visible and is retracted laterally exposing the posterior aspect of the tibia, the displaced posterior lipping fragment, and the posteriorly displaced astragalus.

With a periosteal elevator the fracture margins of the fragments are carefully cleaned off so that the dentations are clearly visible and can be anatomically fitted into the proper place. Only when all the dentations fit accurately can a reduction be considered anatomical. Needless to say visibility here is priceless. A neurosurgical aspirator is used throughout the procedure to keep the field absolutely dry. We prefer the Frazier aspirator for this type of case. (see illustration — Figure 2.)

The posterior fragment is friable and the most proximal end is very thin. For this reason gentleness and firmness are required so as not to split the bone. The Schrey pressure bar is essential to avoid damage to this fragment. The serrated broad base of the instrument prevents skidding off the fragment and also eliminates the danger of breaking the posterior lipping fragment. (see illustration — Figure 2.) With the fragment anatomically reduced and held in place by the pressure bar, the first hole is drilled through both fragments and the depth of the hole is measured with a Jackson depth gauge. (see illustration — Figure 2.) A shank hole of slightly larger size is now drilled through the proximal fragment so that no threads engage the bone, and the proper screw length is selected. The ideal screw is one which just perforates the cortex on the anterior aspect of the tibia.

The screw is carefully inserted and screwed firmly into place. A second drill hole and screw is now inserted lower down on the fragment so as to assure fixation and avoid rotation of the fragment.

Closure of the soft tissue is done with 000 chromic catgut and interrupted black silk is used for the skin closure.

A pressure bandage of the Ace or Tensor type is used to hold on the dressings and also to pre-

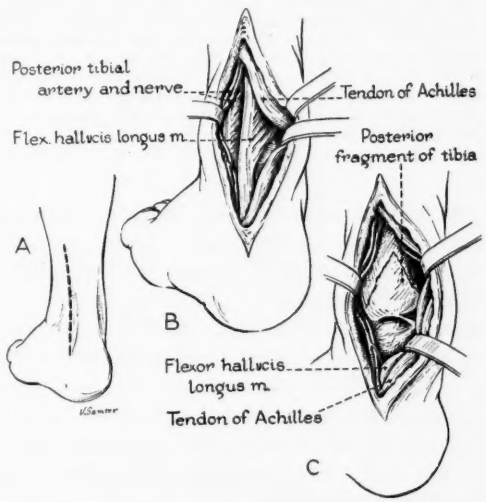

Figure 3. A. Longitudinal incision just medial to the tendon of Achilles. B. By retracting the tendon of Achilles laterally and the posterior tibia vessels and nerve medially, the tendon and part of the muscle belly of the flexor hallucis longus muscle comes into view. C. By retracting the flexor hallucis longus laterally, the posterior aspect of the tibia and the lipping fracture of the tibia can be readily identified.

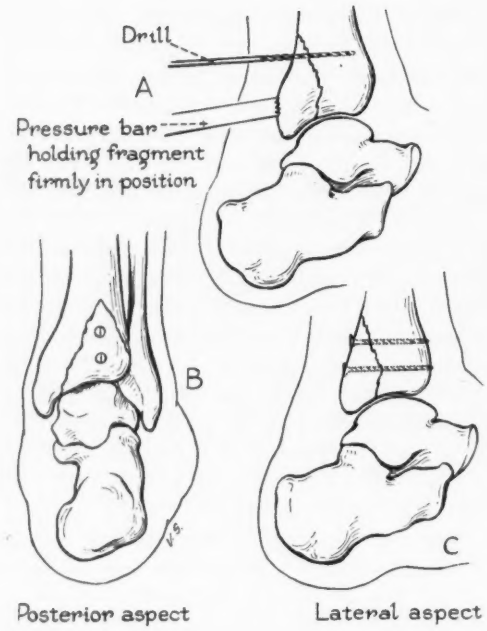

Figure 4. A. The dentated margins of the fracture are anatomically reapposed under direct vision. The serrated end of the pressure bar is broad enough so as not to break through the thin cortex of the lipping fracture fragment, and is used to hold the fragment in place while the surgeon drills the first hole for the insertion of the screw. B. A schematic posterior view of the fracture held in place by two screws. This prevents rotation of the fragment and also adds to the security of the fixation of the fragments. C. It is desired that the screws just engage the anterior cortex of the tibia. If the screws are too short, there is practically no gripping power in the soft cancellous bone. If the screws are too long they protrude into the soft tissue interiorly and cause future trouble. For this reason a Jackson depth gauge to accurately measure the length of the screw is essential.

Figure 5. A. P. injured March 3, 1947. Pre-operative films taken March 3, 1947.

Figure 6. A. P. show result four and one-half months later.

vent postoperative edema. The bandage runs from the toes to the knee. The constrictor is removed after all the dressings have been in place and the pressure bandage applied. In no case has any bleeding of consequence occured. A circular cast is now applied running from the toes to the knee with the foot in very little equinus. We have found that keeping the knee slightly bent and running the cast to the middle of the thigh is not necessary and offers only theoretical advantages.

Postoperatively the patient is again placed on the Thomas splint with elevation of the leg. This makes the patient more comfortable and prevents postoperative swelling of the extremity.

At the end of two weeks the sutures are removed and a new cast applied. The patient is permitted to be up on crutches with absolutely no weight bearing.

Ten to twelve weeks postoperatively the cast is slit and physical therapy is instituted. Heat,

Figure 7. M. E. Injured July 7, 1947. Pre-operative films taken July 7, 1947.

massage and graduated exercises of the ankle are performed daily. Whirlpool to the leg is also advantageous.

It must be remembered that the lower end of the tibia is cancellous bone and this requires a minimum of 120 days to heal by callus formation. Therefore weight bearing is not permitted prior to that time.

The usual period of total disability in the average uncomplicated case is in the vicinity of five to six months from the date of surgery.

CONCLUSIONS

Twenty-eight cases have been operated by the authors in the last seven years with very excellent results in the majority of the cases. Failure resulted in two cases because of inability to obtain the reduction desired. Both of these cases required ankle fusion.

Fragments involving less than 20% of the bearing surface of the tibia usually do not require surgery and can be treated by reduction and immobilization in plaster.

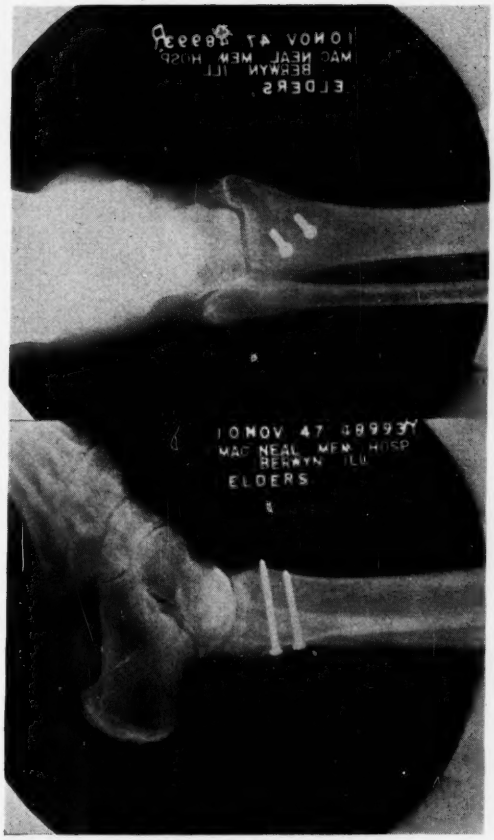

Figure 8. M. E. show result five months later.

Fragments involving more than 20% of the bearing surface of the tibia had best be treated by open reduction, anatomical reapposition and internal fixation if a successful outcome is to be anticipated. The earlier these cases are operated, the better are the chances of success.

Old posterior lipping fractures with a persistence of the orginal pathology had best be treated by a primary ankle fusion.

Diet and Pre-Eclampsia

Howard L. Penning, M.D.
Springfield

Pre-eclampsia as defined by the American Committee on Maternal Welfare is a disease dependent on or peculiar to pregnancy. The classical picture of abnormal weight gain with edema, hypertension and albuminuria is chiefly noted in the last trimester. The syndrone, however, begins developing late in the first trimester or early in the second trimester, first manifested by low blood pressure and a tendency to gain weight. In the last trimester there is a sharp rise in blood pressure and the appearance of albumin in the urine, with edema present. Characteristically, the majority of these syndrones seldom end in eclampsia but are terminated by emptying of the uterus, either spontaneous or otherwise and the patient rapidly returns to a normal blood pressure, clear urine and extreme loss of weight produced by diuresis.

The viewpoint that pre-eclampsia is a toxemia of "late" pregnancy is held by many, however, the insidious onset begins much earlier. Some years ago, Falls recommended that a better term for pre-eclampsia was Eclamptogenic toxemia. We wonder if this term does not better describe the genesis of the toxemia and emphasize the need for early prophylaxis before the condition becomes clinically evident.

When one carefully evaluates the histories of previous labors, one comes to the conclusion that pre-eclamptic toxemia is far more common than some statistics would lead us to believe. This is possibily due to the fact that statistics are generally taken from sources where prenatal care is apt to be good. This observation, however, is supported by a recent report by de Alvarez[1] of Michigan, who found that 75.9% of their toxemias were "true" toxemias of pregnancy.

While much has been written on the treatment of pre-eclampsia, it is felt that not enough emphasis is given to prevention. The scope of this paper is to stress the simpler procedures available to every physician in preventing pre-eclampsia and its sequel, eclampsia.

Presented before the General Assembly 109th Annual Meeting, Illinois State Medical Society, May 17, 1949.

The nutritional requirements and deficiencies in pregnancy have been discussed by many observers. A round-table discussion led by Dr. Philip F. Williams[2] at the Third American Congress in Obstetrics and Gynecology, pointed out the general deficiency of the diet of the average American woman. It was observed that "whatever the cause, there are widespread deficiencies in the intake of protective foods, the sources of proteins, minerals, and vitamins among the diets of American women". One group of pregnant women of average economic status was reported to have an average protein intake in self-chosen diets of 58 gms. daily. This is contrasted with the recommendation of most authors that the daily protein intake be over 100 gms. The normal non-pregnant individual requires a gram of protein in the diet for every 2.2 lbs. of body weight[2].

One of the simplest observations to make in the prenatal period is the weight of the pregnant woman and the rate of weight gain. It is also one of the most important records and the one most neglected. The patient who is already obese, or who shows an early tendency to excessive weight gain is more likely to develop or be developing toxemia. Mengert[3] in studying a series of 641 obese patients, found an incidence of 31.4% of toxemias of pregnancy.

The normal weight gain for the average pregnancy is somewhere between 16 and 20 pounds. Dieckman advises an optimum weight gain of 16 pounds. The normal increase in weight is accounted for by the weight of the baby, the enlarged uterus, the placenta and amniotic fluid, the physiologic increase in blood volume and the hypertrophy of allied organs.

Loughram[4] advises limiting the weight gain in the first half of pregnancy to ¼ pound per week, with a maximum of 15 pounds allowed for the entire pregnancy if the original weight was normal. Numerous observers have pointed out the significance of weight gain in toxemias. Abnormal weight gain can only be due to increased body mass or obesity, or to water retention. We believe that water retention is very significant in pre-eclampsia since the weight loss

after delivery is usually produced by diuresis.

The exact etiology of water retention is not well understood. Hormonal balance may be a factor. There are, however, two factors that seem significant: protein metabolism and sodium ingestion. It is well known that a lowering of the plasma proteins is conducive to tissue edema, particularly when it is associated with increased venous pressure as is found in many pregnant women.

A deficiency in protein in the diet will lower the nitrogen level; a consequent depletion of the body tissue to supply normal protein requirements, may lead to nutritional edema. As has been stated before, the average adult female diet definitely is not high in proteins, but rather characterized by a preponderance of carbohydrates. Women generally are not meat eaters; consequently the low protein diet may be significant. Williams states that the daily ingestion of a large serving of meat, a quart of milk, and 2 eggs will furnish 85 gms. of protein. Other proteins may bring the intake up to 100 gms. daily. Such a protein intake will supply approximately 1/6 of the 2,500 calories needed daily by the active pregnant woman. Carbohydrate intake should be individually controlled, for an excess leads usually to lowered intake of the protein and vitamin rich foods.

Luikart[5] reports 1000 patients on a high protein, low caloric diet none of which developed toxemia, pre-eclampsia or eclampsia.

Looking at the role played by sodium chloride, it is generally held that the sodium ion is a chief offender in the production of tissue edema. Numerous workers have demonstrated the storage of sodium and potassium in extra-cellular fluids. The relation of sodium chloride and water to the interchange of inter-cellular and extra-cellular fluids is important during pregnancy. An impaired elimination of, or an excessive intake of either or both, contribute to the production of edema during pregnancy. It is a fact that toxemias are not developed among pregnant animals and when one examines the basic differences in diets, the administration of sodium chloride to the diet is the one outstanding feature.

Strauss[6] was able to produce or relieve water-retention toxemia by manipulation of the sodium intake.

At the present time most obstetricians adopt a decreased allowance of sodium chloride in the diet when edema arises during pregnancy. It has been observed, however, that there can be an increase in body weight of 15 pounds from hydremia, before it becomes manifested clinically. So a woman can have a tremendous increase in water in the tissues and destroy an electrolyte mechanism without it being recognized by the physician[2].

It would seem that since weight gain is the earliest symptom of the development of pre-eclampsia, if we can control or prevent the abnormal gain, we can prevent or treat pre-eclampsia before it appears. Actually diet can accomplish very little after the syndrone has developed, because of the shorter time element.

We feel that the time to institute corrective dietary measures is long before the condition becomes clinically evident. A simple dietary control can be applied to all patients with few exceptions. First of all a high protein diet should be emphasized. Animal protein, chiefly in the form of meat should be a part of at least two meals a day, giving a protein intake from 100 to 120 gms. per day. The fat intake should be low and starches restricted. Unless the starches are specifically limited, the average patient will consume 50% of her diet as starch. This, however, is an individual problem and must be handled individually. A patient who is not having a satisfactory weight gain must have starches added to her diet rather than taken away. The patient must be urged to eat fresh fruits and vegetables. Milk should be encouraged, with the cream removed if the patient is obese. At least 1 egg a day should be taken.

A low salt diet is most important. It is not enough to tell the patient to not eat salt, she must be specifically instructed to use salt sparingly, seasoning fresh foods as cooked, but not adding more salt at the table, and most of all to avoid the foods already prepared with excessive salt, such as: processed meats of all kinds, canned vegetables and soups, relishes, pickles, tomato juice, popcorn, nuts, canned fish, etc. Other forms of sodium must be designated in the instructions to the patient. Bicarbonate of soda will be used for "heartburn" unless specific instructions are given to avoid its use.

For the patient who simply over eats and is miserable because of her excessive appetite, we

prescribe dextroamphetamine sulphate in 5 mgm. doses, one hour before meals.

Careful scrutiny of weight gains usually brings satisfactory "weight consciousness" in the patient. A gain of 1 pound per week is regarded as significant. The doctor must often be a detective in searching for the faulty factor when a satisfactory response is not obtained in spite of the patient's protests that she has followed the diet.

The specific gravity of the urine is a useful clue to "cheating" on salt ingestion: when the specific gravity goes up and there is associated weight gain, it is usually due to water and sodium retention. If we cannot discover the offending element in the diet we have the patient list everything taken by mouth for one week and at the same time induce an acid diuresis by administering Ammonium Chloride in 45 grain daily doses. It is best given at four day intervals, followed by two days rest. Given thus, Ammonium Chloride remains effective as a mobilizer of sodium and promotes its excretion for long periods. Occasionally magnesium sulfate is given to increase fluid elimination by way of the G. I. tract.

It is well to remember that there are many sources of sodium and that all have to be considered in the susceptible patient. Recently a seven pound gain in two weeks was noted in a primipara. She firmly asserted that she was following a "low salt diet". On questioning her it was discovered that she was drinking large amounts of tomato juice, which is notoriously high in salt content. Elimination of the tomato juice restored the water balance.

In general the more frequently the patients are seen the better the control. At the present time patients are reporting earlier in pregnancy than was true a few years ago. It is not at all uncommon for patients to report two weeks after a missed period. This gives the physician a considerable advantage in managing the pregnancy. We have followed the regime of forced hydration advocated by Eller[7] and Randall with very good results in treating and preventing nausea and vomiting. Routinely, we see our patients every three weeks until the 24th. week, then every two weeks until the 36th. week, then at weekly intervals until term.

Our series of cases is not large. They are all taken from private practice since the war. The results in following this regime have been significant enough to convince us that the incidence of pre-eclampsia in our practice has been below that in our community. Of 450 cases none were hospitalized because of pre-eclampsia. There have been one essential hypertension and three nephritic toxemias, which were hospitalized because of impending kidney failure. All were successfully delivered. One of the latter babies died 48 hours after delivery.

Weight control has been gratifying to most patients. Where patients were overweight at the beginning an attempt was made to effect a net loss during pregnancy. One patient was 5 feet tall and weighed 205 pounds when first seen at 10 weeks; at 6 weeks post partum, she weighed 162 pounds. Her baby weighed 8½ pounds at birth. It is not always easy to overcome the prejudice against diet restriction during pregnancy which is so prevalent among the laity. Most of the Grandmas are certain the baby will be too small.

CONCLUSION

Dietary management presents a potent weapon in the hands of the physician for the prevention of pre-eclampsia. Control of weight gain, adequate protein intake and restricted sodium intake for all patients may greatly reduce the incidence of pre-eclampsia.

410 S. Eighth St.

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Diagnosis and Treatment of Diseases of the Parathyroid Glands

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Diseases of the parathyroid glands, though encountered infrequently, are usually amenable to treatment if diagnosed early. It seems worthwhile, therefore, to review certain physiologic concepts regarding these endocrine glands and to identify criteria for diagnosis and treatment.

ANATOMY

The parathyroid glands are small brownish-red bodies, measuring about 5 mm. by 3 mm. by 1 mm. and resembling flattened oval discs. They are usually located posterior to the thyroid gland and consist of two superior and two inferior glands. Aberrant parathyroid tissue may be found in the neck or upper mediastinum. Gilmour and Martin found the average weight of the glands to be less than 263 mg. in males and 295 mg. in females[1]. Embryologically, the parathyroid bodies develop as outgrowths from the third and fourth branchial pouches. Histologically, the glands consist of masses of cells arranged in columns with many intervening capillaries.

PHYSIOLOGY

The parathyroid bodies are endocrine glands whose presence is vital to the organism. Experimental removal results in tetany, with death occurring by asphyxia and laryngeal spasm due to an acute disturbance of the calcium-phosphorus balance[2]. Regulation of this balance is the only known function of the parathyroid glands. A brief discussion of calcium-phosphorus metabolism is necessary for complete understanding of parathyroid physiology.

Calcium metabolism.—Over 99 per cent of the body calcium is located in the bones and teeth with the remainder in the blood and other body fluids. Calcium is absorbed from dietary foodstuffs in the upper intestine. Calcium deposition in bone and absorption from bone occur constantly and under normal conditions balance each other. Calcium is lost from the body principally in the urine and feces but also through the placenta and lactating breast.

The normal value for calcium is 10.5 ± 1.0 mg. per 100 cc. of blood. About 50 per cent is rigidly bound to protein. The remaining fraction occurs in the ionic form and is affected by the parathyroid glands. An exact picture of calcium metabolism can be obtained only if both the serum calcium and the serum proteins are determined. By correlating these values, according to the nomogram of McLean and Hastings[3], accurate impressions can be obtained.

Phosphorus metabolism.—Phosphorus likewise occurs predominantly in bones and teeth. Serum phosphorus exists as inorganic phosphate, the normal value being 3.5 ± 0.5 mg. per 100 cc. of blood. Organic phosphorus compounds are found in certain body tissues but are unaffected by the parathyroid glands.

The reciprocal relationship between the calcium and the phosphorus content of the blood may be expressed as the equation $(Ca^{++})^3 \times (PO_4^{\equiv})^2 = K$. In conditions where the serum calcium is reduced, the serum phosphorus is elevated and vice versa. The parathyroid glands are important in maintaining this relationship.

Metabolism of bone.—The storage of calcium carbonate and tri-calcium phosphate in bone depends upon the osteoblastic activity of the bone-forming cells and the osteoclastic activity of the bone-destroying cells. Normally these processes are in a state of balance. Alkaline phosphatase is an enzyme supporting the deposition of calcium and phosphorus in bone. The measurement of alkaline phosphatase in serum is an index of the osteoblastic activity of bone. Elevated readings are obtained in bony diseases with marked osteoblastic regeneration.

Action of parathyroid hormone.—No parathyroid substitution therapy was available until 1925 when Collip obtained an extract from beef

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parathyroids capable of elevating the serum calcium of tetanic individuals[4]. This substance was called parathormone and furnished specific therapy for parathyroid insufficiency. When parathyroid extract is injected into experimental animals or normal human beings, hyperphosphaturia, hypophosphatemia, hypercalcemia, and hypercalciuria are obtained. Albright[5] feels that the primary action of parathormone is a phosphate diuresis with secondary blood changes. Collip[6] believes that parathormone directly stimulates osteoclastic activity in bone. These opposite theories are as yet unproved, and it may be possible that parathyroid extract acts on both bone and kidney.

Relationship to other endocrine glands.—No other endocrine gland affects calcium and phosphorus metabolism as intimately as the parathyroid glands. The existence of a specific "parathyreotropic hormone" secreted by the anterior pituitary gland has been postulated[7] but never proven. Pope and Aub, in their review, could find no consistent or conclusive evidence for such a relationship[8]. The only important connection between the thyroid and parathyroid glands is their contiguity in surgical procedures.

HYPOPARATHYROIDISM

Accidental removal of parathyroid tissue during thyroidectomy is the most common cause of hypoparathyroidism. More rarely, parathyroid insufficiency follows the purposeful removal of overactive parathyroid glands to alleviate hyperparathyroidism. Drake and associates described chronic idiopathic hypoparathyrodism, a rare condition in which the glands are replaced by fatty tissue[9].

Clinical picture.—The most important findings are the low serum calcium and the high serum phosphorus[10]. The clinical picture consists of signs of neuromuscular excitability, such as paresthesias of the hands and feet and muscular twitchings. Carpopedal and laryngeal spasms, positive Chvostek and Trousseau signs, and convulsive seizures may be encountered. Cataracts are frequent complications in long-standing cases. Changes in the nails and hair have been described[11]. Camp summarized twelve cases of hypoparathyroidism with basal ganglia calcification and recommended routine skull roentgenograms in this condition[12].

Differential diagnosis.—Other causes of hypocalcemia, such as rickets, steatorrhea, and renal insufficiency, must be excluded. Tetany may also be due to the alkalosis of hyperventilation, excessive ingestion of alkali, and loss of gastric contents.

Treatment.—No satisfactory therapeutic agent was available until 1925 when Collip introduced parathormone as specific therapy for hypoparathyroidism[4]. However parathyroid extract is expensive, requires parenteral administration, and gradually loses its effectiveness in some cases.

In 1933, dihydrotachysterol (AT 10) was introduced[13] and is now preferred therapy[14]. AT 10 is administered orally in initial daily doses of about two to four cc. Urines should be checked daily for calcium content by the Sulkowitch test[15]. When heavy white precipitates form consistently, the dosage of AT 10 should be reduced to a maintenance level of 1 cc. three to five times weekly. Hypercalcemia is not without danger, and a slightly subnormal serum calcium is preferable. Serum calcium and phosphorus determinations may also be performed.

Calciferol (vitamin D_2) is a cheaper preparation but not as effective as dihydrotachysterol. Certain mild cases can be maintained on daily dosage of 50,000—200,000 units.

For the acute exacerbations of tetany, intravenous injections of calcium may be administered. Diets high in calcium and low in phosphorus are desirable, but milk is contraindicated because of its high phosphorus content. One teaspoonful of calcium lactate or gluconate, dissolved in hot water three times daily, insures adequate calcium intake.

PSEUDOHYPOPARATHYROIDISM

In pseudohypoparathyroidism, a rare disease first described by Albright,[16] the organism fails to respond to the parathyroid hormone although no deficiency exists. This condition is not affected by parathyroid extract but improves with AT 10 and calciferol therapy[17].

PRIMARY HYPERPARATHYROIDISM

"Primary hyperparathyroidism" is a condition in which more parathyroid hormone is produced than is needed. In secondary hyperparathyroidism the excess is present for some compensatory purpose.

History.—Osteitis fibrosa cystica was first described in 1891 by von Recklinghausen[18]. However, its relationship to hyperparathyroidism was not known until 1925 when Mandl cured a patient by surgical removal of a parathyroid tu-

mor[19]. In 1934, Albright and colleagues directed attention to the frequent occurrence of renal calculi in these cases[20]. Later they reported hyperfunctioning parathyroid tumors with renal calculi and without bone disease[21]. Hyperparathyroidism due to primary hypertrophy (hyperplasia?) of parathyroid tissue was first described in 1938[22].

Symptomatology.—Most parathyroid tumors are not palpable and must be recognized by the clinical symptoms which fall into three general groups:

(1) *Symptoms due to hypercalcemic blood changes*:

In contradistinction to tetany, these are vague and consist of muscular atony, weakness, and constipation.

(2) *Symptoms due to urinary tract involvement*:

Hypercalciuria and hyperphosphaturia are accompanied by polyuria and polydipsia, so that diabetes insipidus may even be suspected. The calcium and phosphorus salts may precipitate in the urinary tract as renal calculi or in the renal parenchyma as nephrocalcinosis. Renal colic, urinary infections, and uremia are common complications.

(3) *Symptoms due to skeletal involvement*:

Minimal bone changes may cause no symptoms or slight aching. As the disease progresses, bone cysts, giant-cell tumors, pathologic fractures, and severe deformities may result.

Laboratory findings.—The cardinal laboratory findings are the increased serum calcium and the decreased serum phosphorus. In 22 per cent of the cases reported by Keating and Cook,[23] at least one calcium and one phosphorus reading were normal. Repeated determinations of the serum calcium, phosphorus, and proteins may be indicated in suspicious cases.

Hyperparathyroidism must be differentiated from vitamin D intoxication, which also increases the serum calcium. A period of observation without vitamin D therapy may be indicated.

The Sulkowitch test[15] may be used as a rough guide for the amount of calcium excreted in the urine. A negative test usually rules out hyperparathyroidism whereas a positive test encourages further studies. Quantitative determinations of urinary calcium are impractical for routine use.

The earliest skeletal change is diffuse osteoporosis of the skull, and in later stages generalized demineralization and subcortical resorption may be found. The advanced changes of osteitis fibrosa cystica are eventually seen. Osseous lesions indicate the duration of the disease rather than the severity. In hyperparathyroidism, the serum alkaline phosphatase, being a reflection of osteoblastic activity, is elevated only in the presence of bone disease. Dental roentgenograms may reveal demineralization of the mandible, disappearance of the lamina dura, and epulis tumors. On the basis of these findings, hyperparathyroidism may be first suspected by the dentist.

Treatment.—The treatment of primary hyperparathyroidism is surgical exploration of the neck, and, if necessary, the mediastinum. In about one-fourth of Cope's cases[24] the tumors were located in the mediastinum. Preoperative calcium administration should be avoided because of the dangers of producing acute parathyroid intoxication[25].

In the presence of normal renal function and a normal serum phosphatase (i.e. no bone disease) the tumor or tumors should be completely removed. If the pathologic change is primary hypertrophy, three parathyroid glands and only a portion of the fourth should be resected. In the presence of elevated serum phosphatase and bony lesions, postoperative tetany is often a serious complication. Albright favors incomplete removal of the hyperfunctioning parathyroid tissue in these cases[26]. In the presence of kidney damage, surgical resection should be conservative since some of the parathyroid hypertrophy may be on a compensatory basis.

Pathology.—Pathologists disagree in their analyses of the hyperfunctioning parathyroid tumors. Castleman and Mallory regard them as benign adenomas[27]. Alexander and associates feel that many of their cases present cytologic evidence of low-grade malignancy[28]. Usually these tumors behave in a benign manner with few reported cases of metastases[29].

SECONDARY HYPERPARATHYROIDISM

Since 1905, it has been known that chronic glomerulonephritis may be associated with parathyroid enlargement[30]. Pappenheimer and Wil-

ens found an actual increase in the weights of parathyroid glands in nephritic cases[31] and were able to produce parathyroid enlargement by experimental surgical reduction of renal substance[32]. The effects of this secondary parathyroid hypertrophy were not clearly recognized until 1937 when Albright, Drake, and Sulkowitch reported the first comprehensive study of this condition[33]. Their suggested nomenclature was "Renal Osteitis Fibrosa Cystica" but recently the term "Renal Osteodystrophy" has been proposed[34]. The salient features of this disease are:

(1) Marked renal insufficiency of long duration.
(2) Phosphate retention with a high serum phosphorus level.
(3) Slight reduction in serum calcium.
(4) Marked acidosis.
(5) Metastatic calcium deposits near joints.
(6) Mönekeberg sclerosis.
(7) Osteitis fibrosa generalisita.
(8) Enlargement of parathyroid tissue.

Albright believes that the parathyroids hypertrophy in renal insufficiency to compensate for the phosphate retention and the low serum calcium level[26]. In this manner, secondary hyperparathyroidism probably prevents severe tetany in many cases of renal insufficiency.

The clinical findings in renal rickets or renal dwarfism resemble those of secondary hyperparathyroidism. In each condition the primary lesion is renal with secondary parathyroid hypertrophy and bone changes. Most authors feel that renal rickets is the juvenile counterpart of the adult renal osteitis fibrosa cystica[35].

The clinical differentiation of primary from secondary hyperparathyroidism may be difficult but is very important. Surgical removal on the one hand may be curative, and on the other hand may be life-endangering. The most valuable laboratory finding in this differentiation is the serum calcium determination which should be elevated in the former and normal or low in the latter condition. Cases have been reported in which both primary and secondary parathyroid hyperfunction occurred in the same patient[36].

COMMENT

Undoubtedly, more cases of primary hyperparathyoidism occur than is generally believed. Alexander and associate found only fourteen cases at the Mayo Clinic in a fourteen year period[28]. In a subsequent two and one-half year period at the same institution, Keating and Cook diligently searched for parathyroid tumors and identified twenty-four cases[23]. Ninety-two per cent of these cases had renal calculi and only 67 per cent had skeletal lesions.

These hyperfunctioning parathyroid tumors should be diagnosed and removed surgically before irreparable renal changes occur. For early diagnosis, attention must be concentrated on the kidney rather than on bone. By the time skeletal lesions appear, the kidneys are already damaged. Special emphasis should be placed on renal calculi since about 4 to 5 per cent of all kidney stones are said to be due to hyperparathyroidism[37].

Every patient with renal calculi or ureteral colic should have routinely, at least one serum calcium, phosphorus, and protein determination as a screening procedure. Frequent Sulkowitch testing of the urine may be helpful. Patients with recurrent renal calculi should be seriously suspected of having a parathyroid tumor and repeated blood studies may be necessary in some cases. If the diagnosis of parathyroid tumor cannot be excluded with certainty, surgical exploration should be performed.

SUMMARY

The parathyroid bodies are endocrine glands important in the regulation of the calcium-phosphorus balance. The only significant parathyroid disturbances result from an excessive or deficient production of parathyroid hormone. Criteria for recognition and treatment of these conditions have been discussed.

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MOTION PICTURE REVIEWS AVAILABLE

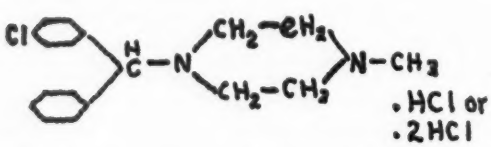
The Committee on Medical Motion Pictures of the American Medical Association has completed the second revised edition of the booklet entitled *Reviews of Medical Motion Pictures*. This booklet now contains 225 reviews of medical and health films reviewed in *The Journal, A.M.A.* to January 1, 1950. Each film has been indexed according to subject matter. The purpose of these reviews is to provide a brief description and an evaluation of motion pictures which are available to the medical profession. Each film is reviewed by competent authorities and every effort has been made to published frank, unbiased comments. Copies are available at a cost of 25 cents each from: Order Department, American Medical Association, 535 North Dearborn Street, Chicago, 10, Illinois.

Histamine Antagonists

XVI. N-Methyl-N'-(4-Chlorobenzhydryl) Piperazine Hydrochloride (Chlorcyclizine).* A New Antihistaminic Compound With Tendency to Prolonged Action.**

Samuel M. Feinberg, M.D.
Chicago

Since increased duration of action is one of the few justifications for the addition of new antihistaminic compounds to our already long list my interest was aroused when in the summer of 1948 a compound with such apparent experimental background was presnetd to me for experimental and possible clinical trial. This compound is N-methly-N'-(4-chlorobenzhydryl) piperazine hydrochloride**



which for the purpose of brevity I shall refer to in this paper as Chlorcyclizine.

EXPERIMENTAL FINDINGS

In our animal experiments it soon became evident that the onset of maximum activity of this compound was delayed. In the intraperitoneal injection of the drug in protection against shock from intravenous histamine in guinea pigs an hour had to be allowed as the interval as compared with the customary 30 minutes. In these experiments 1 mg. of the drug prevented death from 1MLD100 of histamine (0.4 mg. histamine base per kg.) in 4 out of 5 animals. A dose of 0.1 mg. of the compound gave similar results. These quantitative findings compare favorably with many other antihistaminic compounds. No studies on duration of effectiveness were made in this particular experiment.

Dyspnea in guinea pigs from aerosolized histamine could be prevented by a dose of 8 mg/kg of the compound given intraperitoneally 30 minutes before histamine exposure and by 3 mg. if given 60 minutes before exposure. The duration of a measurable degree of protection against histamine aerosols after such intraperitoneal doses was 7 hours. This duration is definitely longer than with most drugs, which average about 4 hours.[1] An aerosol of Chlorcyclizine of 2 per cent or greater gave only incomplete protection against histamine aerosol and the duration of this effect was 45 minutes. Both in duration and degree of effectivenesss from such topical application the drug was distinctly inferior to many of the other potent antihistaminic compounds.

In the prevention of anaphylactic shock in guinea pigs a dose of 3 mg. per kilogram given intraperitoneally prevented fatal shock in 5 out of 5 animals when the challenging dose was given 1 hour later. With a 1 mg. dose the shocking injection was fatal to 3 out of 10 animals. Controls in this series showed 85 per cent mortality.

Studies were made on the effect of this drug in inhibiting the histamine skin reaction in man. Two methods were used. One was the method previously described and modified by us, in which quantitative studies of the histamine flare are made after pretreatment of the abraded skin sites with various concentrations of the antihistaminic compound.[2] By such technic the inhibiting effect of this compound was weak, even when the usual 10 minute exposure to the compound was increased to 30 minutes. The

*This compound is designated as "Di-paralene" by Abbott Laboratories and as "Perazil" by Burroughs-Wellcome and Company.

**This compound was presented to me practically simultaneously by two pharmaceutical houses, the mononydrochloride by Abbott Laboratories and the dihydrochloride by Burroughs Wellcome and Company.

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inhibition of the histamine flare was studied also after the oral administration of this antihistaminic compound.[3] The results showed marked variabilities not encountered in similar studies with other antihistaminic drugs. In some subjects the degree of inhibition equaled that of Pyribenzamine, in others it was slight and in still others no inhibiton of the flare whatsoever could be demonstrated. In those subjects where the degree of inhibition was good the maximum effect was obtained in some in 1 hour (this is the usual time with other antihistaminics), in others in 2 to 3 hours. The duration of effect in some cases was 4 hours while in others it was 8 to 18 hours. One could not escape the impression from these findings that this compound is peculiar in that its action is variable and capricious, and perhaps dependent on individual variations in capabilities of metabolizing it. The rather weak action of this drug when applied locally to the human skin or to the guinea pig's bronchial mucosa lends further credence to the likelihood of a metabolic (internal) factor being involved in activating this drug.

It should be emphaized that in the histamine skin reactions we adopted the flare measurement as a criterion of response. We were perfectly aware of the general concept that the wheal (edema) is regarded as the direct effect of the histamine while the flare is considered as an axone reflex. Nevertheless, hundreds of actual experiments with histamine indicated that the flare is quantitatively related to the amount of histamine, that its degree of inhibition is quantitatively related to the amount of antihistaminic drug previously applied and that it could be much more accurately measured than the wheal.[2] Indeed, in a large percentage of experiments the wheals were entirely too small or unclearly defined to permit accurate measurements.

Chlorcyclizine was selected by the two laboratories which presented it to me as the most promising compound from a series of substituted piperazines.([4,5,6,7,8]) Castillo and his associates[9] demonstrated interesting pharmacologic activity with Chlorcyclizine. The histamine contraction in the tracheal chain experiment showed prolonged inhibition. The prevention of asphyxial collapse from histamine aerosol in the guinea pig by oral ingestion of 25 mg. of the drug per kilogram compared favorably with other antihistamines. These authors claimed that some of the inhibition could be demonstrated as long as 43 hours. The compound had some antiacetylcholine action and slight anti-$BaCl_2$ effect. Local anesthetic action was the same as with Benadryl and 1 per cent solution in the rabbit's eye caused no mydriasis. The LD50 in mice from single intraperitoneal doses was 137 mg. per kilogram, comparing favorably with many other antihistamines.

Roth and his coworkers[8] report that with 3 mg. of this drug per kilogram intraperitoneally deaths could be prevented in some animals from 1LD100 of histamine intravenously after 18 hours and longer. A dose of 0.1 mg/kg. intraperitoneally or 2.5 mg/kg. orally after 1 hour gave complete protection to 1LD100 histamine intravenously. The antiacetylcholine value (rabbit intestine) was about 1/100 that of atropine.

Jaros and his associates[10] report a study of the effect of 100 mg. doses of Chlorcyclizine orally on the histamine wheal of the human skin. The method used was only a slight modification of the technic as to the instrument, method of application, dilutions of histamine and other particulars outlined by me personally to Jaros in the autumn of 1948. The only essential modification of their technic consisted in the fact that they measured the wheal instead of the flare. The authors conclude that their findings demonstrate an effectiveness of inhibition greater than Pyribenzamine and they claim that this effect is still demonstrable after 32 hours, as compared with 24 hours for Pyribenzamine. With the technic outlined the accuracy and significance of wheal measurements are open to question. For example, the authors present a representative table of wheal measurements in which figures of 0.5 to 2.5 mm are recorded. Claims based on accuracy of measurement of such small and ill-defined histamine wheals are open to doubt as to their significance.

CLINICAL EXPERIENCE

The drug was administered to over 200 patients and of these data on 183 patients were obtained. The allergic manifestations consisted of 125 instances of seasonal hay fever, 43 cases of perennial vasomotor rhinitis and 71 miscellaneous allergies, some patients having more than one complaint. The patient was instructed to take the tablets when needed for the relief of the attack. If that was not satisfactory the tab-

TABLE 1
HAY FEVER

RESULTS OF TREATMENT WITH CHLORCYCLIZINE

		Type of Hay Fever			Dose of Drug		
Desensitized patients	87	Grass	Ragweed	Mold	25mg.	50mg.	100mg.
Not helped	41	8	36	23	1	33	7
Helped	46	10	40	17	2	43	1
Non-desensitized patients	38						
Not helped	22	3	20	7	1	18	3
Helped	16	6	11	11	0	15	1

lets were taken in the morning and at bedtime. In some instances, where the symptoms were present during the night or early morning only, a bedtime dose of the medication was tried. Although both the monohydrochloride and dihydrochloride were used separately the data were combined since it was obvious that the effects were identical. The results are recorded simply as "helped" or "not helped". If the drug was only occasionally effective or only slightly so its value was regarded as questionable and the result was not included in the "helped" column.

Hay Fever. Table 1 shows results in seasonal hay fever, mainly during 1949. It will be noted that 62 patients out of 125 obtained effective relief with this drug.

However, by the use of a punch card record system a number of other interesting facts could be correlated. Those patients who had received desensitizing treatment were separated from those who had not had treament. It will be noted that a greater percentage of the desensitized patients were helped by the drug. Furthermore, in the latter group the use of this and other antihistaminic drugs was in many instances only occasional, whereas in the non-desensitized group the antihistaminic drugs more often had to be given frequently and continuously. The degree of relief, too, was usually more complete in the desensitized group. In many patients in the non-desensitized group who where included in the "helped" column the results were satisfactory in the beginning or mild parts of the season, whereas later or in the heavy portions of the season the antihistaminic drugs would fail to produce any effect. This was also noted in the desensitized group but was less common there. It is particularly worthy of note that in the obstructive stage of the hay fever this drug, as well as other antihistaminic drugs, failed to give relief in the majority of instances.

The hay fever cases were also separated and grouped according to whether they were grass, ragweed or mold. No significant differences were observed. It will be noted that the majority of patients took 50 mg. doses. Those who took 100 mg. doses were mainly the ones who failed to obtain benefit from the 50 mg. doses.

Other Manifestations. Table 2 indicates a list of a number of allergic complaints in which Chlorcyclizine was used. While most of the groups do not have a sufficient number of cases from which to draw conclusions it is quite obvious that this drug does not give the consistant relief described recently by Jaros.[11] According to that author one daily 50 mg. dose of the drug produced satisfactory results in 22 out of 23 hay fever patients, 18 out 21 vasomotor rhinitis, 7 out of 7 cases of urticaria, and 17 out of 18 of dermatitis of various types. Our results in vasomotor rhinitis in which 18 out of 43 were helped fall below the efficacy we have obtained with most other antihistaminic drugs. Chlorcyclizine had very little effect in asthma, helping only 3 out of 36, and never in an acute attack. This lack of effectiveness in asthma is in line

TABLE 2
MISCELLANEOUS ALLERGIC MANIFESTATIONS RESULTS OF TREATMENT WITH CHLORCYCLIZINE

	Total	Not helped	Helped
Perennial rhinitis	43	25	18
Asthma	36	33	3
Cough	8	4	4
Urticaria	7	4	3
Atopic dermatitis	11	4	7
Dermographism	1	0	1
Contact dermatitis	2	0	2
Pruritus ani	1	1	0
Miscell. dermatitis	3	2	1
Headache	2	2	0

with our experience with other antihistamines and constitutes a potent argument against the neglect of desensitization in the hay fever-asthma syndrome. It might be added that the only asthma patients in whom we used this drug were those who had an associated hay fever or perennial rhinitis.

Speed and Duration of Action. In view of some of the experimental claims for this compound it was advisable to study speed of action and duration of clinical effectiveness. It is difficult to obtain such data from most patients. This is particularly true of duration of effect. In most instances the allergic symptoms without the use of any drug occur only during part of the 24 hour period. For example, a large number of hay fever patients have an hour or two of morning symtoms and have no further recurrence until night or the following morning. If the antihistaminic drug results in relief in a half hour or an hour and the symptoms recur in the evening or the next morning it is not to be concluded that the effect of the drug was of 12 or 24 hours duration. As a matter of fact, one cannot employ such patients for the study of duration of effect. Hence, it is obvious that such observations can only be made in a limited group.

The speed of action needs some comment. From Table 3 one gets the impression that this speed of action is the same in most instances as with other drugs. However, this may be misleading, since those patients in whom the onset of effect was delayed were not likely to time it. In other words, those patients who failed to obtain effect in an hour or 1½ hours were instructed to take the dose twice daily at regular times. In such cases the timing of effect could not be ascertained by the patient.

The duration of effect showed a tendency to be increased as compared with other antihistaminic drugs. Most of the patients listed in the 3-6 hour group had results lasting only 4 hours. On the other hand, there were an appreciable number of patients having relief longer than 8 hours. In no instance was there clear evidence of effect lasting as long as 24 hours. The most striking impression one gains is that this drug appears to be unique in its variability of duration. Not only may it fail to produce any effect at all, but when the effect is present it may last 4 hours or as long as 15 hours.

TABLE 3
SPEED, DURATION OF EFFECT AND PERIOD OF USE

Speed of action		Duration of effect		Period drug was taken	
½ hr.	18	3 hrs.	0	Less than 1 week	94
1 hr.	8	3-6 hrs.	15	1-6 weeks	68
1½ hr. to 2 hrs.	3	6-8 hrs.	17	1½-3 mons.	17
		8-11 hrs.	6	More than 3 mos.	4
		12-15 hrs.	7		

The period during which the drug was taken varied primarily with the nature of the effectiveness and nature of the symptomatology. Those who obtained little or no benefit took the medication for a week or less. In all such instances, however, the drug was taken a sufficient number of times to assure us of the constancy of the results. Twenty-one patients took Chlorcyclizine for a period of 1½ to several months. No remote toxic effects were noted in this group.

Doses. The doses on which the results are based are listed in Table 4. Generally, a 50 mg. dose was prescribed. When the latter was not effective it was frequently increased to 100 mg. This explains why the 100 mg. group obtained such poor results: they consisted mostly of those patients who failed to respond to 50 mg. The majority were given 50 mg. (sometimes 100 mg.) twice daily or instructed to take it as needed.

TABLE 4
DOSES OF CHLORCYCLIZINE ADMINISTERED

	Children	Adults
25 mg.		
Not helped	3	2
Helped	2	2
50 mg.		
Not helped	22	44
Helped	22	60
100 mg.		
Not helped	4	17
Helped	0	5

Comparison with Other Antihistaminic Drugs. An attempt was made to administer other antihistaminic drugs in the same patient at different times for the purpose of comparative observation. Out of the entire group, 118 such patients took pyribenzamine or other potent antihistamines to allow such comparison. It must be admitted that such comparisons are prone to pitfalls and misinterpretations, but on the whole

they are of some significance. Thirty-three reported that Chlorcyclizine was less effective than other drugs, while 35 felt that it was more effective. In 50 patients no difference was noted between Chlorcyclizine and other drugs. In 32 of this latter group the results were poor with all drugs.

Toxic Effects. Table 5 shows the incidence

TABLE 5
SIDE ACTIONS FROM CHLORCYCLIZINE

	Children	Adults
25 mg.		
Mild	0	1
Severe	0	0
50 mg.		
Mild	3	11
Severe	4	9
100 mg.		
Mild	0	3
Severe	0	2
Total	7	26

of side actions arranged according to size of dose, age group and severity. It will be noted that the 25 mg. dose produced undesirable effect in only 1 out of 9, the 50 mg. dose in 27 out of 148, and the 100 mg. dose in 5 out of 26. It is interesting to note that while in the entire series 26 out of 129 adults (20 per cent) had toxic actions, only 7 out of 54 children (13 per cent) complained of side actions with similar doses. One cannot be certain whether that is due to a lesser sense of awareness in children or whether due to an actually lesser toxicity. However, the evidence points more to a greater tolerance in children. As with the vast majority of other antihistaminic drugs, sedation was the outstanding side effect. The other toxic actions (see Table 6) were those also usually found with other antihistaminic compounds. As a whole, it

TABLE 6
INCIDENCE OF VARIOUS SIDE ACTIONS

Sedation	21
Dizziness	3
Weakness	4
Disturbed concentration	2
Headache	1
Nervousness	1
Cardiac symptoms	1
Diarrhea	1
Dryness	1

can be said that this drug in the doses employed did not show a great tendency to acute toxicity.

DISCUSSION

A method of record and analysis by a punch card system has given us more pertinent and comparative data in a recent study of antihistaminic drugs. Such a study has indicated that Chlorcyclizine is a moderately effective drug in clinical allergy and that it has some tendency to prolonged action. However, an outstanding characteristic of this compound is that its therapeutic response, topical effectiveness, speed of action and duration of effectiveness are more variable and unpredictable than in the case of other antihistaminic drugs. Such variability might be explained on the basis of a metabolic change of the compound, either to activate it or to inactivate it. This metabolic change must be assumed to be one which varies considerably in different persons. It could take place in the gastrointestinal tract, in the liver or almost any place else. It might even be predicated on differences in gastric acidity. Much work would have to be done to determine the mechanism of this change. If the metabolic factor were found to be a simple one it might be possible to do something to favor the constancy of the action of this drug.

The clinical results of duration of action are not comparable to those reported in animal work. There are several possible reasons to explain this discrepancy. The important fact is to realize that the final evaluation of such a characteristic must be on the basis of its clinical effect. It should be emphasized that the findings on histamine flare studies in man agree pretty well with our clinical experience. A further improvement of such data might be obtained by noting the duration (and degree) of flare inhibition and the therapeutic action of the drug in the same subjects.

One or two other antihistaminic drugs were studied virtually during the same period, frequently on the same patients and analyzed according to the same scheme. One, for example, was a fluorine analogue of Pyribenzamine.[12] It will be noted that the findings with this drug differ materially in many aspects from those with Chlorcyclizine.

It is not easy to compromise our clinical findings with those of Jaros.[11] It might be conceivable that the hay fever findings in Jaros' report rep-

resent very mild cases, managed in a mild season, in a locality with a low pollen count or that the patients constitute a select group. By our study of a sufficiently large and varied group, compared with other drugs, other patients, and an experience of many seasons, we are forced to the opinion that the conclusions of Jaros are premature and will not be substantiated by others. This feeling is strengthened when we compare Jaros' findings with ours in the nonseasonal allergies, manifestations which should show a minimum of variability in different parts of the country.

Some time ago I suggested that in view of the already large number of antihistaminic drugs on the market, the manufacturers should be advised that new drugs in this field should possess one or more of the following advantages: (1) much greater potency; (2) greatly reduced toxicity; (3) considerably prolonged effectiveness and (4) adjunct action (bronchodilator, antihistaminogenesis, sympathomimetic, antiacetylcholine, etc.). Jaros and his associates[10] state that "It is felt that in presenting compound 47-282 (Chlorcyclizine) most of these criteria are met." Our experience indicates that potency of effect is no greater and less consistent than in the case of some other drugs; the toxicity is of a low order, but by no means rare; and adjunct activity is certainly not present. As a matter of fact, only with respect to prolonged action has this compound any advantage. Furthermore, even in this respect there is marked undependability, so that this criterion has not been fully met.

It is well to emphasize again that with this drug as well as in similar studies with other drugs[12] it is obvious that desensitization results in a much lesser need for antihistamine therapy. When antihistaminic drugs are needed the incidence and degree of effectiveness is greater in this group. The tabulated data presented here do not tell the whole story since they do not include a large number of desensitized patients (about 50 per cent) in whom no antihistaminic drugs were required. Most important is the warning that neither this drug nor other antihistaminic drugs relieve an appreciable percentage of asthmas, seasonal or chronic, in spite of the 76 per cent figure claimed by Jaros.[11] On the other hand, desensitization therapy is an excellent prophylactic against asthma, and this should constitute one of the most potent arguments for considering the latter treatment first and the antihistaminics only as adjuncts. It should be added further that the publicizing of the antihistaminic drugs in the last few years for the treatment of asthma has resulted in a distinct decline in the effectiveness of purely symptomatic management. The old reliable antihistamatic remedies, epinephrine, ephedrine, iodides and aminophylline have been largely replaced by the less effective antihistamines. Even the advantages from the progress made with the newer bronchodilators, isopropyl epinephrine and Orthoxine, have not been sufficient to compensate for this loss.

SUMMARY

1. Experimental and clinical findings are presented for a new antihistaminic compound, N-methyl-N'-(4-chlorobenzhydryl) piperazine hydrochloride (Chlorcyclizine), for which there is some claim for prolonged action.

2. Our laboratory findings indicate that this drug is fairly potent and that its onset of action is moderately delayed.

3. Studies on local inhibition of histamine flares in man and aerosol inhalation in protection against histamine aerosols in the guinea pig indicate that the topical action of this drug is poor.

4. Clinical studies indicate a moderate degree of effectiveness in allergic manifestations, which is lesser in incidence than that obtained with several other of the more potent antihistaminic drugs.

5. The unique feature of this compound is its tendency to prolonged action, producing effects lasting 6 to 15 hours in some instances. The prolongation of action does not reach the duration anticipated by some of the previously reported laboratory findings. The undependability of this prolonged action robs this compound of a good portion of its theoretical advantage.

6. It is postulated that the variability of effectiveness, speed and duration of action may be the result of specific metabolic differences in individuals.

7. The difference between the action of this compound as well as other antihistamines in desensitized and undesensitized patients is analyzed. It is emphasized that in a large percentage of persons the antihistaminic compounds cannot replace desensitization therapy.

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Formation and Dissolution of Bladder Stones

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Dr. Warren H. Cole, Professor of Surgery: Experimental surgery covers a wide area. From research now in progress, we have selected those phases of our work which we feel should be of interest to both surgeon and internist. Dr. Vermeulen will present studies on the formation and dissolution of bladder stones which he has conducted during the past two years.

Dr. Vermeulen: Although much has been written on the etiology of urinary stones, it must be admitted that the essential mechanisms involved in stone formation remain obscure. In an effort to gain a clearer picture of the process, we have studied some of the factors influencing the formation of stones about a foreign body surgically implanted in the bladder of rats. With such an experimental preparation, stone formation is rapid, reasonably constant, and the stones produced are uniform in chemical composition. These considerations and others make it relatively easy to accumulate statistically valid observations in controlled experiments. The rats are kept on a standard diet routinely used in our animal hospital. On it, rats do not develop urinary calculi spontaneously.

I shall describe two of our experiments. In the first, we studied the influence of urinary pH on stone formation which follows implantation of a foreign body in the bladder. The same type of foreign body was used in all rats. It

consisted of a 3 millimeter square of zinc. Before implantation, the foreign bodies were each weighed so that the amount of calculous deposit could be accurately determined by subtraction at the conclusion of the experiment. Groups of animals were placed on three different diets. The first group consisted of controls fed the stock diet. The second group were fed the same diet except that 1.5 per cent ammonium chloride had been added; this group developed a highly acid urine. The third group of rats were given stock diet plus 1.5 per cent sodium bicarbonate so as to alkalinize the urine. The diets were continued for six weeks. The pH of the urine removed from the bladder was determined by means of a pH meter with a micro glass electrode. The average pH found in the different groups were: control — 6.4, acidified — 5.7, and alkalinized — 7.3. At the time of autopsy the fifteen control rats were found to have produced a stone that averaged 41 milligrams in weight. The twenty rats on ammonium chloride developed a negligible deposit upon the foreign body that weighed an average of only 2 milligrams. On the other hand, the twenty-one alkalinized animals had an average of 70 milligrams of stone. It would thus appear that an acid urine will inhibit this type of stone formation. Such a finding is not surprising since our stones are uniformly composed of magnesium ammonium phosphate — a material soluble in acid.

After we had demonstrated the preventive effect of acidification, we sought to determine whether such treatment would dissolve a stone that had already developed. Foreign bodies were therefore implanted into the bladders of a number of rats and stones permitted to develop for a period of six weeks by giving all animals the stock diet. At that time they were operated upon and the stones removed, weighed, and reimplanted into the same rats. Thereafter the animals were divided into two groups. One was continued on the stock diet to serve as controls. The remainder of the rats were given the acid diet with ammonium chloride. The test period lasted four weeks. All animals were then sacrificed. Before the start of the test period the twenty-nine control animals contained a stone that averaged 77 milligrams. At the completion of the experiment they had grown to an average of 155 milligrams. The twenty-six acidified rats, on the other hand, had lost an average of 49 milligrams from a previous average of 89. In fourteen of this group, dissolution was complete with the zinc found bare in the bladder. In only two had the stones increased in weight. It is apparent that an acid urine, if of sufficient degree, can actually dissolve this type of stone. Unfortunately, human stones composed of magnesium ammonium phosphate are ordinarily found in association with urea-splitting infection where the urine is markedly alkaline. In such cases acidification by such substances as ammonium chloride would not ordinarily result in an acid urine.

The second type of experiment I would like to describe was done in an attempt to determine the effect of diuresis upon stone development. Again, zinc implants were used as the stimulus to stone formation. Diuresis was produced in rats by substituting glucose solution for the regular drinking water. Rats apparently enjoy this fluid and in consequence drink large quantities. In spite of the increased intake of glucose, sugar does not appear in the urine. By setting up experiments similar to those where the effect of pH was studied, it was possible to demonstrate that diuresis will likewise prevent stone formation, and in addition, will dissolve stones that had already been allowed to form. However, in this experiment an interesting complication arose. It happened that our colony became infected with an organism of the pasteurella group which was found to be an urea-splitter. Every infected animal was found to have an intensely alkaline urine with a pH above 7.5; and in every one so infected, the stones continued to grow very rapidly despite the enormous urine volume produced by the large fluid intake. Additional experiment established that the increased carboyhydrate intake alone without a corresponding increased fluid intake fails to inhibit stone formation in rats.

These and other observations we have made emphasize the role of a foreign surface in the urinary stream as an important factor in stone formation. No doubt such abnormal surfaces appear from time to time in the lining of the urinary tract clinically, as for instance, Randall plaques on the renal papillae. However, there seems to be insufficient data at the present time

to conclusively establish the importance of such foreign or abnormal surfaces in urolithiasis clinically. One thing seems to be clearly demonstrated by the two experiments cited today — the process of stone formation is a reversible one. There is every reason to hope that practical means of dissolving stones in patients may ultimately be developed.

Dr. Robert M. Kark, Associate Professor of Medicine: In view of the fact that renal colic became extremely common amongst North American soldiers when they moved to a dry tropical climate, I wonder if you have noticed seasonal variations in stone formation?

Dr. Vermeulen: We have not investigated this aspect of the problem. At one time we thought there might be, but we were unable to confirm this initial impression.

Dr. Robert L. Grissom, Associate in Medicine: Vitamin A has been recommended for the prevention of urinary stones. The assumption is that Vitamin A prevents keratinization and thus eliminates a potential nidus for stone formation. Have you studied the influence of Vitamin A on stone formation in rats?

Dr. Vermeulen: No, we have not. It is our belief that Vitamin A deficiency plays little or no role in clinical stone formation. To use it experimentally results in animals with a marked metabolic abnormality. Accordingly, changes so produced bear little resemblance to conditions seen clinically.

Dr. Melvin M. Chertack, Clinical Assistant in Medicine: Have you made quantitative analyses of the urinary uric acid?

Dr. Vermeulen: Rats do not excrete uric acid. However, the calcium, magnesium, and phosphorus excretion has been studied quite extensively in most of our experiments. Upon acidification of the urine the urinary excretion of calcium and phosphorus per day was found to be about double the normal in the experiments described today. The magnesium remained essentially unchanged. Despite the increase in phosphorus, acidification resulted in stone dissolution. In the diuresis experiments, the per diem excretion of calcium, magnesium, and phosphorus remained essentially unchanged. The marked urinary dilution in the animals with diuresis resulted in a marked reduction in the urinary concentration, of course.

Dr. Morton I. Grossman, Associate Professor of Clinical Science: Does the ammonium chloride itself induce diuresis in rats?

Dr. Vermeulen: The animals fed ammonium chloride had approximately a 25 per cent increase in urine volume — not at all comparable with that obtained by drinking glucose solution.

Dr. Russell A. Forrest, Clinical Assistant in Medicine: Is there an electrolytic effect of zinc which induces the stone formation?

Dr. Vermeulen: We have used various metallic and non-metallic foreign bodies. Of those used, all produced stones equally well with exception of paraffin and the polythenes. If we implant paraffin, no stone forms on the paraffin but many independent daughter calculi form in the bladder. Daughter calculi are, as you saw, common with all types of foreign bodies where active stone formation is going on. On the other hand, polythene produces neither a calculus about it nor daughter stones. And if zinc and polythene are implanted simultaneously in the same bladder, a calculus forms on the zinc while the polythene ordinarily remains bare. We can possibly explain the failure of paraffin and polythene as stone nuclei by assuming that a suitable surface must be wettable. Both paraffin and polythene have non-wetting surfaces.

(Editorial Note) Dr. Vermeulen's presentation was part of a Seminar on Experimental Surgery — a panel under the chairmanship of Dr. Warren H. Cole, Professor of Surgery, University of Illinois, College of Medicine. In addition to Dr. Vermeulen, Dr. Tilden C. Everson and Dr. Clarence R. Heidenreich participated in the panel. Dr. Everson presented studies on the adequacy of individual amino-acids in surgical conditions, Dr. Clarence R. Heidenreich an experimental and clinical evaluation of iodo-thiouracil in the treatment of hyperthyroidism.

CASE RECORDS OF THE COOK COUNTY HOSPITAL

KARL MEYER, LEO M. ZIMMERMAN, DEPT. EDITORS

Intra-abdominal Aneurysm

Manuel E. Lichtenstein, M.D., and Harry M. Richter, Jr., M.D.
Chicago

Abdominal aneurysms occur infrequently but they are of sufficient importance to be included in the differential diagnosis of acute, recurrent, progressive or chronic abdominal conditions. Unless the condition is kept in mind as a possible cause for acute abdominal pain its presence may be overlooked and the treatment instituted may be inadequate for the condition or may prove disastrous.

Spontaneous circumscribed arterial aneurysms are the most common variety of the acquired type. It is recorded that 75 per cent of these occur between the ages of thirty and fifty years and ninety per cent of them are syphilitic in origin.[1] They occur more frequently in men but their occurrence must be suspected in women too. In addition to syphilis as an etiological factor in producing the changes in the vessel wall, arteriosclerosis accounts for many of the dissecting aneurysms as well as the saccular variety noted in the abdominal aorta. Less frequently mycotic embolism, periarteritis nodosa and chronic infections such as tuberculous abscesses in contact with large vessels may be causal factors in the development of this condition. Trauma plays a role in initiating the perforation of the vessel at a weakened site in its wall. Straining at work or at stool, sudden exertion or intense physical effort frequently precede the "blow out" but often the weakened vessel wall requires but mild pressure either direct or indirect to lose its continuity. The spontaneous perforation is similar in some respects to the traumatic perforation of a vessel by a penetrating or perforating missile or instrument. In both of these no sac is present immediately and the sudden loss of blood into a circumscribed area results in a pulsating hematoma usually referred to as a false aneurysm. Persistence of this hematoma for a long period of time may result in the development of a fibrous wall and thus simulate the saccular variety. The chief difference lies in the disease of the vessel wall in the spontaneous variety and the usual absence of a diseased wall in the traumatic type.

Aside from the symptoms due to loss of blood and the pain resulting from the vascular per-

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From the Surgical Service of Dr. Manuel E. Lichtenstein.

foration, pressure on adjacent structures may produce serious disabling symptoms. While the danger of recurrent perforation is ever present, compression of veins and lymphatics (distal swelling); nerves (neuritis — paralyses); muscles and fascia (fibrous myositis and sclerosis); and, bones and joints (erosion) cause sequels to the persistence or enlargement of this expanding lesion. The danger of infection of the hematoma or gangrene of the part supplied by the affected main vessel must also be anticipated.

Superficial aneurysms are easily detected and in the extremities are readily diagnosed by the presence of a pulsating tumor. However, abdominal aneurysms are more obscure. Severe boring pain, radiating along the ureters, the spermatic cord or the round ligament; or acute intestinal cramps followed by the development of "shock" should make one suspicious of the perforation of a large vessel. A pulsating mass with a bruit heard on auscultation noted soon after the onset of the symptoms is confirmation of the nature of the disorder. The pain is usually extremely severe and should arouse suspicion of the vascular lesion.

The case history to be presented illustrates many of the peculiarities of this condition including the difficulty in diagnosis and the hazard of being unprepared to cope with such a lesion when it is not diagnosed. In addition this patient illustrates the care needed for recovery and the principles to be followed in the treatment of this particular type of aneurysm.

Mrs. P. W., age 43, was admitted to a Medical Service at Cook County Hospital April 16, 1948 for study two weeks after an episode of severe acute abdominal pain. About noon on the day of onset of the present condition the patient experienced a cramping pain in the left lower abdominal quadrant. As the pain persisted, at about 8:00 P.M., a laxative was taken. This was followed at about 3:00 A.M. by a bowel movement immediately after which the patient collapsed while in the bath room. On recovery she returned to bed, and for about 24 hours vomited everything she ate or drank. Some relief from pain was obtained by lying on her left side. Gradually the pain subsided. On the advice of her physician she came to the hospital.

The past history as reported by the patient was noncontributory. In 1939 a hysterectomy had been performed at another hospital.

Figure 1 — Retrograde pyelogram—left. Note dilation of ureter and displacement to the right.

Physical examination revealed a slight, colored female who was not acutely ill. B/P 145/105. T 99⁴ P 94. Pupils were equal and reacted to light. The essential finding was a hard, fixed, nodular mass filling the left lower two thirds of the abdomen and lumbar region. No pulsation was noted, although a bruit was heard over the entire mass. The femoral artery pulsations were normal. Vaginal and rectal examinations disclosed the mass not connected to the pelvic viscera. At cystoscopy the left ureter was catheterized and films taken. Figure 1. There was dilatation and displacement of the left ureter beyond the midline just above the pelvic brim. Urine examination showed a trace of albumen, s.g. 1.022, no sugar, no cells or casts. The blood examination showed Hb 55% W.B.C. 7,700 PMN 81% EOS 5% Lymphs 12% Monos 2%. The Kahn test was inconclusive but the Wasserman was negative. An EKG showed left axis deviation with a slightly prolonged QR interval.

The diagnosis arrived at was renal or retro-

peritoneal tumor. The patient was transferred to the Urologic Service and extraperitoneal exploration was contemplated. A blood transfusion (500 c.c.) was given on May 14, 1948 and another (500 c.c.) was given on May 15, 1948, the day of surgery. Through the left lower oblique incision — a mass of blood clot was encountered which when disturbed resulted in profuse bleeding. The region was immediately packed with two rolls of gauze each 5 yards in length. Postoperatively another transfusion of 500 c.c. of blood was given. It was obvious now that a large vessel was involved and the mass constituted a hematoma. On May 16, 1948 another 500 c.c. of blood were administered. Thus 2000 c.c. of blood had been administered in this three day period.

The patient was now transferred to a General Surgery service and prepared for abdominal exploration. Following the administration of 500 cc of whole blood on each of three consecutive days the Hb rose to 86 per cent. Under ether — oxygen anesthesia, the aorta above the bifurcation was exposed and compressed, the packs previously inserted were removed and a large laminated hematoma was evacuated after the posterior parietal peritoneum was incised. Careful exploration now disclosed a perforation in the internal iliac-artery within a few millimeters of the bifurcation of the left common iliac-artery. This perforation was slightly irregular and had a long axis approximately 5 mm in length parallel to the vessel. This opening was sutured with 0000 silk and hemostasis was obtained. The ureter was blood stained but there were no other apparent abnormalities. On the day following surgery another 500 cc. of blood were administered. The post operative course was uneventful and the patient was discharged on the sixteenth post operative day. She returned to the Outpatient department for observation. A pyelogram made several months following the operation (figure 2) showed the ureter to be in a normal position with the dilatation markedly relieved.

It was noted previously that in 1939 a hysterectomy had been done at another hospital. A review of the record from this hospital disclosed that the patient had received Bismuth and Mapharsen therapy for latent syphilis for a period of three years starting in 1942. The

Figure 2 — Retrograde pyelogram *left 4 mo. post-operative.* Compare with Figure 1. Note return to normal position.

Discussion.—The purpose of this presentation is to emphasize the need for keeping in mind aneurysms as a cause for abdominal pain and retroperitoneal tumor. The history may be inconclusive or lack a clear cut description for any clinical entity. The history of syphilis obtained after the operation was of no help in marking a diagnosis but this too emphasizes the importance of a complete history. A sudden anemia without external loss of blood or the development of shock should suggest internal bleeding and loss of blood volume that may follow perforation of a large vessel. In the present instance the failure to appreciate more fully the bruit heard on physical examination over the mass in the abdomen helped to miss the correct diagnosis. This is not said in criticism for the bruit may have been transmitted to a mass overlying an intact large vessel. However, it should arouse suspicion at least that a vascular defect is present.

The advantages of a blood bank to make available large quantities of compatable blood to restore a blood loss adequately and permit surgery

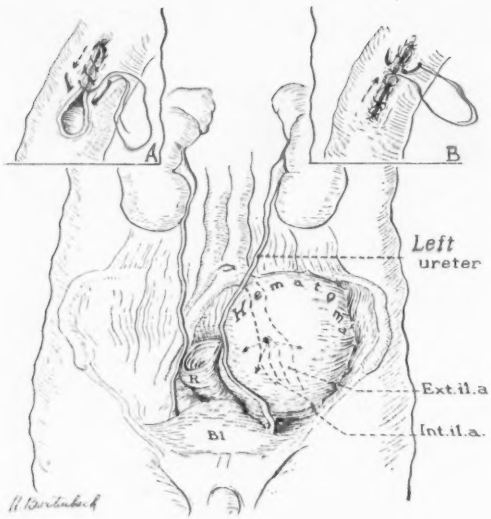

Figure 3

to be undertaken with a slight risk is well illustrated here. It must be remembered that the hematoma represents a volume of blood twice its size. When clotting occurs and the liquid portion of the blood is absorbed the formed elements and fibrin mesh represent only 50 per cent of the total volume of blood lost. The continued enlargement of the mass accounts for the loss in blood volume and marked secondary anemia found is this condition.

In the surgical management of this condition the type of procedure undertaken to control hemorrhage depends on several factors. Arteriosclerosis may prohibit successful vessel suture or even ligation. However, in the present instance vessel suture was possible and was done. (figure 3) Here again vessel suture was mandatory since ligation for control of bleeding would have required ligation of the common and external iliac arteries as well as the internal iliac artery.

Provisional control of the flow of blood during the reparative procedure by compression of the aorta is of course a primary essential and emphasizes the need for being above the vascular defect before undertaking exposure of the bleeding point. It is this fact alone which emphasizes the need for keeping aneurysms in mind for failure to heed this principle may lead to disastrous hemorrhage in an awkward situation. day following surgery another 500 cc of blood

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CASE REPORTS

Ovarian Pregnancy

Sidney W. Raymond, M.D., F.A.C.S.
Chicago

Ovarian pregnancy is a very uncommon condition whose existance was for many years questioned. *However, Stux and Gertsel proved that* ovarian nidation does occur. Novak[1] has reported fifty cases collected from the literature and other acceptable cases have since been added. Dale[2] places the incidence as being about .29% of all ectopic pregnancies. In the last nine year period, records of two hospitals show 173 ectopic pregnancies came to operation[3] and in none of these, except the case here reported, was the pregnancy ovarian.

Spiegelberg, modified by Norris[4], requires the following criteria for acceptance as a true ovarian pregnancy. 1) That the tube and fimbria ovaria must be intact and the former clearly separated from the ovary. 2) That the gestation sac definitely occupy the normal position of the ovary. 3) That the sac be connected with the uterus by the ovarian ligament. 4) That unquestionable ovarian tissue be demonstrable in the walls of the sac.

A pregnancy that meets these requirements is herewith reported.

CASE REPORT

Mrs. L. H., age 28, white, had been married *three years.* During this time she had never become pregnant. Menarch was at the age of *fourteen and she could never recollect any irregularities* from that time up to and including a period *which had occurred thirty-four days before* her entrance to the hospital. Catamenia had been twenty-eight to thirty days apart, had lasted five days, and was always of normal volume.

On the sixth day beyond the expected date of the period, the patient felt the urge for a bowel movement. Following evacuation, a sudden, severe pain was felt in the pelvis, most marked on the left side. She felt weak, sweat profusely and was nauseated but did not vomit. She became semi-stuperous.

Examination showed a well developed female, of about the age stated. She was pallid, cold and covered with fine perspiration. The pulse was rapid and weak but regular. The abdomen was tense and of normal contour. No vaginal bleeding was present. There was tenderness in all directions, vaginally and rectally; and thru both approaches, a boggy, exquisitely tender mass could be felt on the left. The temperature

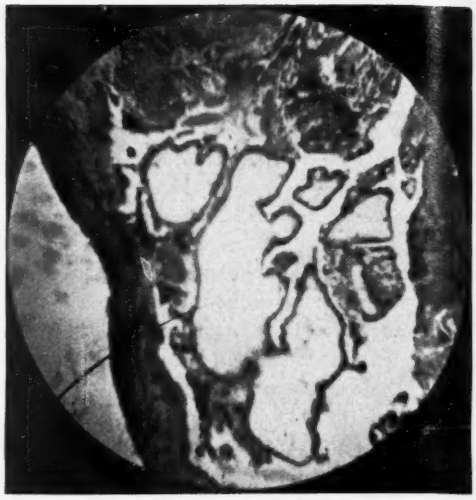
on admission to the hospital was 98 degrees F. The hemoglobin was 84% (Gms. 14.25) and the blood fell into Group B Rh Neg. The erythrocytes totaled 4,200,000 and the leucocytes 5,550.

Because of the short time past due for a period, absence of any vaginal bleeding, evidence of intra-abdominal bleeding, and presence of a mass, a working diagnosis of rup'ured ovarian cyst was made. Ruptured ectopic pregnancy and twisted ovarian cyst were also considered.

Before compatible blood of a Rh Neg. nature could be obtained, the patient's condition began to improve. The pulse dropped to 90 per minute and became stronger; her color improved. The profuse sweating stopped. She had received a quarter grain of morphine as soon as seen and plasma had been s'arted on entrance to the hospital. It was decided to operate at once as proper blood could not be obtained for several hours. Plasma was continued during and after the opera'ion. 500 CC of whole blood was given the day after operation.

Operation. — Under cyclo-propane-curare anesthesia, a suprapubic, verticle midline incision was made. The peritoneum appeared reddish-purple and, when opened, dark red liquid blood was present. An amount of blood sufficient to permit visualization of the pathology was removed by aspiration and sponge.

The left ovary with its pathology was about the size of a small lemon. (7x6x5 Cm.). Three cystic formations were seen, the larger of which (about 3x2.5x2 Cm.) had a rent approximately 1.5 Cm. in leng'h in its wall and from this there was a flow of blood. The other two cysts were intact. The left and right tubes and the right ovary were grossly normal. The left ovary had a well developed utero-ovarian ligament and was well separated from its corresponding tube. An eight inch clamp was placed on the pedicle without disturbing the normal tube. The ovary was removed, its pedicle was transfixed and ligated and the stump was turned in to the broad ligament. The abdomen was closed without drainage. The patient left the operating room



Section through ovarian pregnancy.

in good condition and made an uneventful recovery.

On March 12, 1949, the leucocytes totaled 5,550, the erythrocytes 3,500,000 and the hemoglobin was 11.9 (70%) with a color index of 1.0.

Pathological Report. — The ovary was the site of three cysts, the largest of which was ruptured; this was the source of the bleeding. The medium sized, unruptured cyst was as follows: —

"Sec'ion of solid hemorrhagic cyst reveals the lumen to be filled with RBC's, fibrin, leucocytes, many well-preserved chorionic villi and trophoblasts. Portion of the wall consists of edematous ovarian connec'ive tissue stroma with congested blood vessels and a corpus albican. Portion of the surface of the cyst consists of fibrin, RBC's and leucocytes. Diagnosis—ovarian pregnancy."

COMMENT

A case of ovarian pregnancy is reported. It is clinically indistinguishable from o'her ectopic pregnancies and, may occur in the presense of other pelvic pathology.

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PATHOLOGY CONFERENCES

EDWIN F. HIRSCH, DEPARTMENT EDITOR

PRESENTATION OF TWO CASES

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RETICULUM CELL LYMPHOSARCOMA

This white male aged 24 years entered St. Luke's Hospital in the care of Doctor Harold Steinberg for the ninth time on January 27, 1950, and died on February 21, 1950. His first admission in May 1946 was for ligation of varicose veins of the right leg. He came again in January 1948 when a diagnosis of reticulum cell lymphosarcoma was made by biopsy examination of cervical lymph nodes. The complaints then were malaise of three to four months duration, swelling of the left side of the neck for six weeks, a ten pound loss of weight in four weeks and a fever of 102 to 103°F. for one week. Other complaints were dyspnea on exertion and pain over the upper part of the sternum with deep inspiration. On the left side of the neck was a non-tender mass about the size of an orange. Just below this in the supraclavicular region was a similar, slightly smaller mass. In the right axilla was a tender pea-sized lymph node. The liver edge was palpable below the costal margin, the edge of the spleen was palpable and tender. X-rays of the chest and abdomen were negative. The blood had 4,900,000 erythrocytes, 5,900 leucocytes per cmm. and 14.1 grams percent of hemoglobin. The differential count was 50 lymphocytes, 20 monocytes, 24 neutrophils, 1 eosinophil and 5 neutrophilic band cells per 100 leucocytes. The Kahn test of the blood was negative. The patient received roentgen ray therapy and was discharged on the 31st hospital day. He was readmitted in January 1949 because of chills and fever for a month and vomiting which had been present for two days. He complained of pain in the chest on swallowing and coughing. The vomiting was precipitated by coughing episodes. He also complained of headache and slight dizziness. The significant physical findings at this time were palpable spleen, a fever of 104°F., pulse 85 and respirations 20 per minute. The blood had 4,110,000 erythrocytes and 1,300 leukocytes and 11.7 grams percent hemoglobin. The differential count of the leukocytes demonstrated 29 lymphocytes, 27 monocytes, 19 neutrophil polynuclears and 25

band forms. The blood sedimentation rate was 57 mms. in one hour. The patient received 500 cc of whole blood and was discharged on the ninth hospital day. He was readmitted again six weeks later for observation and symptomatic treatment. One week before admission he had had chills and fever. The leukocyte count was 3,750 per cmm. The patient was given two 500 ccs units of whole blood by transfusion and was discharged on the fifth hospital day. He was admitted for the sixth time in February 1949, started on nitrogen mustard therapy, and received two units of blood by transfusion. His seventh admission was in August for nitrogen mustard therapy and transfusion. Roentgen films of the chest revealed a mediastinal tumor mass. The physical and laboratory findings were similar to those on previous admissions. His eighth admission, again for nitrogen mustard therapy and transfusion, was in December 1949. During the interval he had had pneumonia for about a week. A week later he again had chills and fever, a severe productive cough, marked weakness, dyspnea on exertion and loss of appetite.

He was a chronically ill, well nourished and well developed white male. The skin was pale, hot and dry. A few small palpable lymph nodes were in the neck. His blood pressure was 106/58 mm of Hg. and the temperature was 103°F. The respirations were 40 and the pulse 100 per minute. The liver edge was questionably palpable. The spleen was not palpated. The physical examination otherwise was negative. The erythrocyte count was 2.33 million and the leucocyte count 1,100 per cmm; the hemoglobin was 6.9 grams percent and there were 10 lymphocytes, 1 monocyte, 19 neutrophils and 19 band forms and 1 abnormal lymphocyte per 50 leukocytes counted. The urine was negative. The blood sedimentation rate was

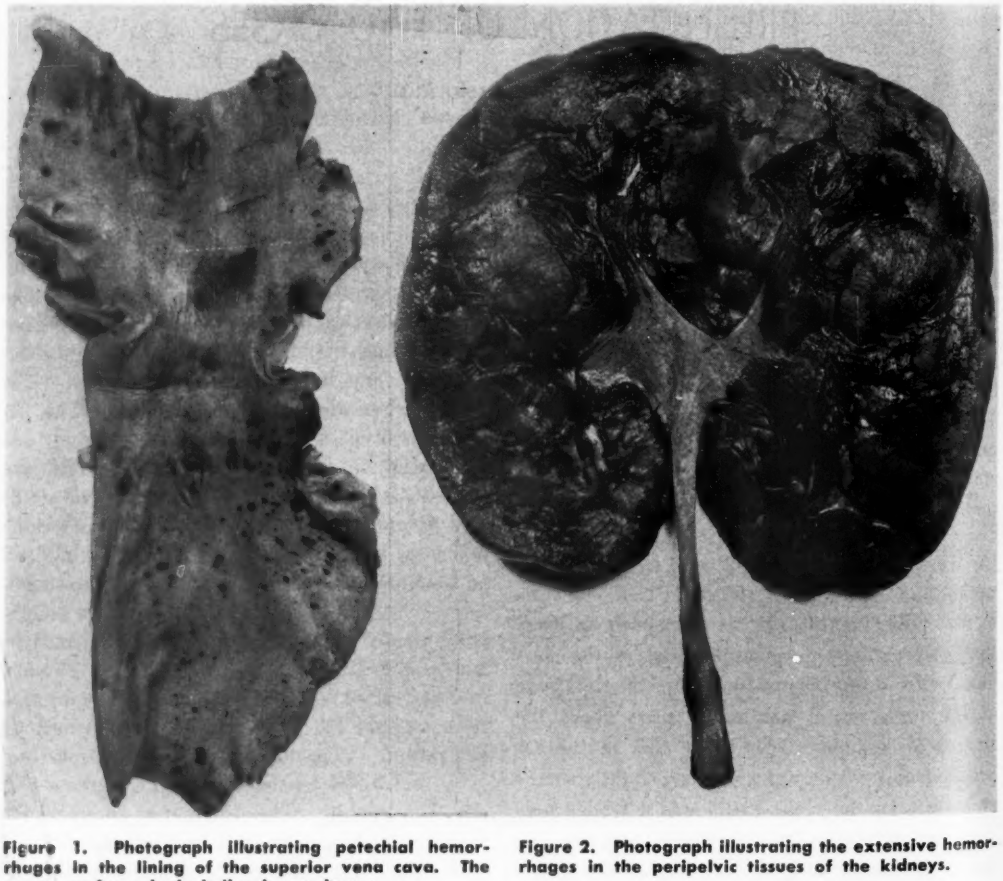

Figure 1. Photograph illustrating petechial hemorrhages in the lining of the superior vena cava. The serous surfaces had similar hemorrhages.

Figure 2. Photograph illustrating the extensive hemorrhages in the peripelvic tissues of the kidneys.

103 mms in one hour. Roentgen films revealed the disappearance of the mediastinal tumor.

While in the hospital his temperature ranged between 103 to 106°F., returning to about normal daily, but later rising to only 100 or 102°F. daily. The patient was given several 500 units of whole blood and nitrogen mustard therapy. He became progressively worse. On the eighth hospital day a biopsy of the sternum was obtained and the diagnosis of fibroplastic tissue replacement (lymphosarcoma) of the sternum was made. In spite of many blood transfusions he remained markedly anemic and had a marked leukopenia. He died on the 21st hospital day with the clinical diagnosis of reticulum cell lymphosarcoma.

The essentials of the anatomic diagnosis of the necropsy are:

Systemic lymphosarcoma;

Marked hyperplasia, hyperemia and subcapsular petechial hemorrhages of the spleen;

Focal lymphosarcoma tissue replacement of the bone marrow of the sternum, the ribs and lumbar vertebrae;

Small hemorrhages and hyperemia of the lymph nodes;

Multiple petechial hemorrhages of the serous tissues;

Extensive hemorrhages of the lining of the right renal pelvis and perirenal pelvic fat tissues;

Marked nephrosis and subcapsular hemorrhages of the kidneys.

The body of this young adult white man weighed 188 pounds. The necropsy was limited to the trunk. Over the sacrum was a decubitus ulcer of the skin 6 cms. in dia. The left side of the neck had an old surgical biopsy scar, and over the manubrium of the sternum, a recent biopsy wound. The lymph nodes in the neck, axillae and elsewhere were small. Each pleural space had 50 to 100 cc of hemorrhagic fluid. The pleural, pericardial and serous surfaces had myraids of petechial and larger hemorrhages. (Figure 1) The heart weighed 400 grams. There were no changes of the valve structures or myocardium. Beneath the endocardium were petechial hemorrhages. The kidneys weighed 235 and 240 grams respectively. The subcapsular surfaces were smooth. The essential changes of the kidneys were parenchymatous, but in the renal pelves and peripelvic fat were

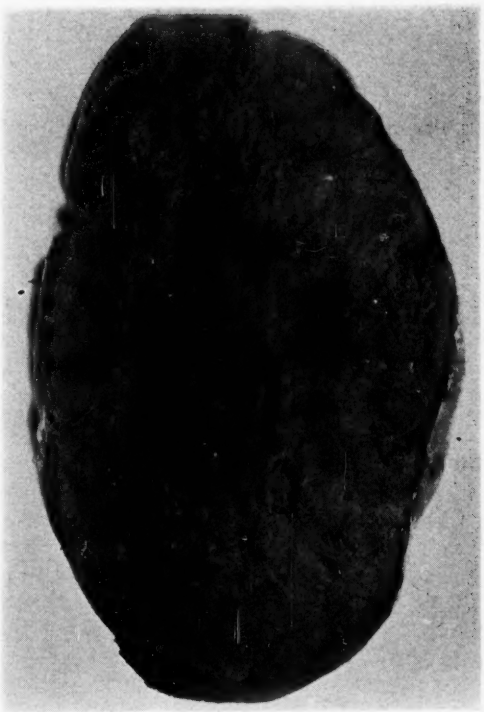

Figure 3. Photograph of a surface made by cutting the spleen, illustrating the hyperplasia and hyperemia.

extensive petechial and larger hemorrhages. (Figure 2) The biliary lymph nodes were slightly enlarged, grey and hemorrhagic. The liver weighed 2800 grams. The capsule was smooth and the surfaces made by cutting had tan brown and red brown lobular markings. The spleen weighed 780 grams. Under the slate grey capsule were many petechial hemorrhages. Surfaces made by cutting were firm, dark red and had a fine filigree of trabecular tissues. (Figure 3) The pulp tissues also had hemorrhages. The grey lining of the stomach and bowel had multiple petechial hemorrhages. The edematous lungs had hemorrhages of the pleura and deeper portions. The spongy portions of the sternum, ribs, and vertebrae had focal deposits of grey tissues but without destruction of the bone trabeculae. (Figure 4)

Although the lymph nodes generally were not greatly enlarged their histologic structure was markedly changed. The lymphoid tissues were replaced by hyaline scars or fibrillar tissues. In the interstices of the fibrillar stroma and about the scars were large protoplasmic reticulum cells. Similar deposits replaced the lymphoid tissues

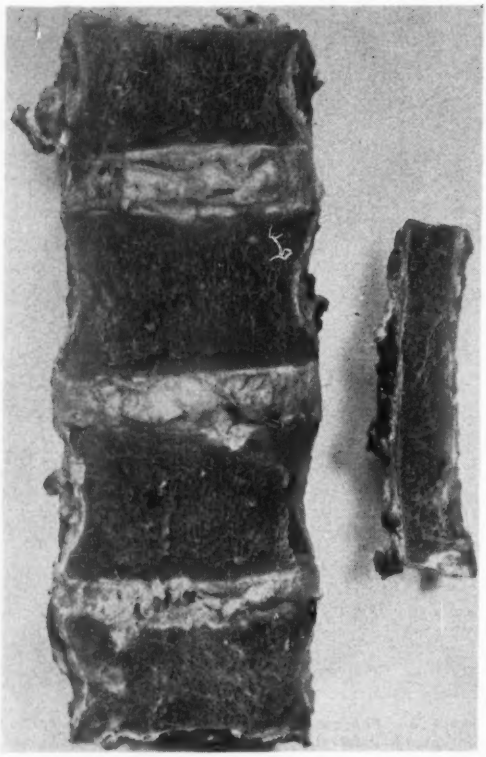

Figure 4. Photograph of surfaces made by cutting lumbar vertebrae and sternum to illustrate the absence of bone destruction and the grey tissue infiltration of the marrow spaces.

of the Malpighian corpuscles of the spleen. The splenic pulp had dilated blood sinuses and the stroma had also large mononuclear phagocytes laden with brown blood pigment. Along the portal systems of the liver were small focal hyaline scars and reticulum cells. Remarkable changes had occurred in the bone marrow. Practically all of the marrow tissues were replaced by large protoplasmic reticulum cells with a little fibrillar stroma, (Figure 5) but without erosion of the bone trabeculae. In brief, the blood forming tissues of the bones had been replaced by large reticulum cells. These tissues, if seen only in a biopsy of the bone, and without the benefit of previous tissue examinations, would present a real problem in interpretation and diagnosis. The initial biopsy of large cervical lymph nodes demonstrated a diffuse replacement of the lymph node tissues by large mononuclear cells, morphologically reticulum cells, some forms large and with one or more lobed nuclei. Among the reticulum cells were some in mitosis. These cell elements provided the basis for the initial diagnosis.

COMMENT

The illness of this patient extended about two years, initially manifested by fever and a sudden enlargement of cervical lymph nodes. Radiation therapy of 10,000 units was given during the first stages of the disease. This amount was considered to be small. The enlarged glands re-

Figure 5. Photomicrograph illustrating the reticulum lymphosarcoma invasion of the bone marrow. X198

gressed in size and remained so. Then the illness manifested itself by attacks of fever ranging to 104 to 105°F. and lasting for several days during which the patient had general debility. The fever would disappear for a few days, appetite would return and the patient would feel reasonably well. Again the fever returned with the associated general symptoms. Five or six injections of nitrogen mustard controlled the bouts of fever and the patient seemed well for two or three months. However, the blood became severely anemic and leukopenic, and blood transfusions were used. These supportive measures gradually failed. Histological examinations of the bone tissue obtained after death demonstrated that the reticulum cell sarcoma had replaced large portions of the hematopoietic tissues of the marrow. The results of this finally contributed largely to his death.

DIABETES MELLITUS WITH NEPHRITIS

This 38 year old white single male chemist entered St. Luke's Hospital on November 23, 1949 to the service of Doctor Chester Coggeshall and died on December 7, 1949.

He was admitted with a history of diabetes for 22 years; swelling of his face and extremities, dyspnea and orthopnea for two weeks and more recently oliguria. His diabetes had been treated by diet and insulin, but the patient thought that he was better able to regulate these himself and tended to fix his own routine. He had had one episode of acidosis about ten years before admission and hypertension for at least two years. In the two weeks preceding admission he had gained 20 to 30 pounds in weight.

When admitted his temperature was 100°F., pulse 120 per minute, respirations 25 per minute, and his blood pressure 180/120 mms Hg. He had generalized edema of the body, dullness to percussion in the base of both lungs, nearly absent breath sounds and coarse moist inspiratory rales above the regions of dullness. The heart was enlarged to the left of the midline, had a sinus tachycardia but no murmurs. The liver was enlarged but its lower border was not palpable. The red blood cell count was 3,400,000 and the leukocytes 9,900 per cmm. The hemoglobin was 9.7 grams percent. The acid urine had a specific gravity of 1.015, 200 mgms percent of albumin, and many granular casts. The blood urea nitrogen was 53 mgms, the non-protein nitrogen 90 mgms, the creatinine 6.6 mgms, the cholesterol 226 mgms, the phosphorus 4.48 mgms percent and the carbon dioxide combining power of the plasma was 44.7 volumes percent. The serum calcium was 8.7 mgms percent, the total protein was 4.50 grams percent with 1.97 grams percent of albumin and 2.53 grams percent of globulin. The sedimentation rate was 40 mm per hour. Serum sodium and potassium values were within normal limits. The blood sugar levels were 144, 220, 478 and 516 mgms percent.

This patient at the time of admission was in uremia with marked restlessness, hyperpnoea and acidosis. The edema of the body including the lungs was marked. Symptomatic treatment for the edema failed. The dyspnoea and edema increased each day and the amount of urine obtained by catheterization was 200 cc on one occasion and 300 cc on another. He died with the clinical diagnosis of diabetes mellitus and Kimmelstiel — Wilson's disease.

The essentials of the anatomic diagnosis (complete necropsy) are:

Marked atrophy and fat replacement of the pancreas—diabetes mellitus;
Nephrosclerosis of the kidneys;
Anasarca;
Ascites;
Bilateral hydrothorax;
Fibrous and fatty changes of the lining of the aorta, its large branches, and of the coronary arteries of the heart;
Hyperemia and edema of the lungs.

The body of this white adult male, weighing 250 pounds, had a marked generalized anasarca; the peritoneum and the right and left pleural spaces each contained two liters of clear yellow fluid. The hypertrophied heart had no vascular or myocardial changes and weighed 370 grams. Both lungs were hyperemic and edematous. The capsule of the kidneys stripped with resistance from a granular red mottled with grey surface. The cortex of brown mottled with grey tissues had a width of 7 mms.; the red-brown pyramid tissues had a height of 2.2 cms. The markings of the cortex were gone, and the glomerular tufts were not visible. The kidneys weighed 140 and 160 grams. Histologically the renal tissues had marked changes of the glomeruli. Many were reduced to rounded hyaline masses, others had

markedly thickened glomerular tufts with hyalinization, and still others had cellular tufts but with thickening of Bowman's capsules. These glomerular changes were accompanied by retrogressive changes and atrophy of the associated tubule structures with stroma tissue replacement. Other tubules had swollen epithelial lining cells. There was a marked hyperemia. The markedly atrophic, tan brown pancreas weighed 90 grams, had a lobular pattern, but the lobules were indefinite and small. The head portion had more lobulated tissues than the body and tail. Histologically there was a marked fat and fibrous tissue replacement of the pancreas tissues. A striking feature was the tremendous size of the islets. Some were five or six times the normal in size and their cells, with pale nuclei and cytoplasm, also were larger than usual. The acinar elements, while sparce, had no significant changes. The liver weighed 2500 grams, had a moderate passive hyperemia, a marked cloudy swelling and small focal regions of fatty changes.

COMMENT

The severe diabetes mellitus of long duration in this patient gradually merged into an equally serious disturbance of renal function and associated hypertension. According to the clinical history this patient had great difficulty in controlling the diabetes with insulin preparations and believed that he could manage himself as an individual rather than through a fixed regime. Trained as a chemist he had informed himself in detail about the disease and himself made many sugar determinations of his blood. When the nephritis became serious and his urine had large quantities of albumin, he managed successfully to live efficiently with his handicaps and to find pleasure in cultural interests. Eventually, as the necropsy demonstrated, glomerular sclerosis with depressed renal function reached a level incompatible with life.

EGYPTIAN DRUG PRODUCES GOOD *RESULTS IN HEART DISEASE*

A drug known as visammin and also as khellin, obtained from the fruit of a plant which grows in Egypt, Arabia and Eastern Mediterranean countries, produces good results in angina pectoris, a group of Chicago doctors report.

Drs. R. H. Roseman, A. P. Fishman, S. R. Kaplan, H. G. Levin and L. N. Katz of the Medical Research Institute, Michael Reese Hospital, describe their study of the drug in an article in the May 13 Journal of the American Medical Association.

"Improvement of the cardiac status was definite in 11 of the 14 cases of agina pectoris," the doctors say. "Moderate improvement occurred in another case, but in the remaining two no benefit was obtained. In four instances the improvement persisted for a time after administration of the drug had been discontinued. This is attributable to the cumulative effects of the drug."

Nausea and insomnia believed to be caused by the drug occurred in five of these 14 patients. Response of the heart condition to visammin is described as "dramatic and unequivocal" in some cases.

A typical example of an excellent result was seen in the case of a 66 year old man with long-standing severe angina pectoris (pain in the chest over the heart area, usually associated with effort).

His response to visammin was rapid and progressive. Not only was he spared surgical operation to relieve the anginal pain, but he was able to extend his activities. The number of glyceryl trinitrate tablets he required daily dropped precipitously. His appetite improved, his despairing attitude resolved and he became alert.

In eight patients with enlargement of the right side of the heart or increased stress placed upon the right side of the heart by lung disease, striking improvement was noted following administration of visammin.

Single injections of visammin resulted in significant improvement in nine of 21 patients with acute bronchial asthma. The response was prompt, occurring within five or 10 minutes, and was often dramatic but usually short-lived.

NEWS OF THE STATE

BOND

Emeritus Membership.—Dr. Katherine B. Luzader was presented with an emeritus membership in the Illinois State Medical Society at a meeting of the Bond County Medical Society in April. The emeritus membership is in recognition of at least thirty-five years of membership in the Illinois State Medical Society. A feature of the meeting was the showing of motion pictures by Dr. Max Fraenkel of his recent trip to Sun Valley, Idaho.

COOK

Liverpool Physician Gives Bacon Lecture.—Dr. H. L. Sheehan, professor of pathology, University of Liverpool, England, delivered the Charles Sumner Bacon Lecture for 1949-1950 at the University of Illinois College of Medicine, May 3, on "The Pathology of Toxaemias of Pregnancy."

Course in Cerebral Palsy.—A two weeks intensive personal course in cerebral palsy is to be given by Dr. M. A. Perlstein at the Cook County Graduate School of Medicine, from July 31 to August 12, 1950. Registration for the course will be by direct application to Mr. James F. Askin, registrar of the Medical School.

"Physical and Emotional Factors in Marriage".—The medical staff and chaplain's department of Augustana Hospital opened a clinic on "Physical and Emotional Factors in Marriage", April 10. The series will be given at 7:30 p.m. on the second Monday of each month and will continue over a year's time. Actually the clinics will not be carried on as a series but each will be completed in one evening, the period to be spent in lectures succeeded by forum discussion. The meetings are opened only to couples or individuals to be married within the month and to those already married. There is no admission or registration charge. Dr. William H. Browne, head of the department of obstetrics and gynecology at Augustana Hospital, is in charge of the clinics and gave the opening lecture.

New Lectureship Honors Maurice Oppenheim.—Dr. Irvine H. Page, director of research of the Cleveland Clinic Foundation, Cleveland, delivered the first annual Maurice Oppenheim Memorial Lecture, May 5, at Mount Sinai Hospital, on "Arterial Hypertension: Its Nature and Treatment."

The memorial lectureship was established in honor of the late Dr. Maurice Oppenheim, head of the department of dermatology and syphilology at the Chicago Medical School. It was established by the Alpha Rho Chapter of Phi Lambda Kappa Fraternity of the school.

University News.—Two subsidiary scholarships, amounting to $10,000 each, have been given to the Chicago Medical School. One is in honor of Mrs. Mary Feinberg, Allentown, Pa. and Miami Beach, Fla. This has been given by Mr. Jacob Feinberg and family. The other, given by an anonymous donor of Miami Beach, Fla., is in honor of Drs. Milton S. Saslow, Howard A. Engle and Morris Blau, all of that city.

Coulter Collection Presented to Northwestern.—One of the country's finest collection of books on physical medicine has been presented to the Northwestern University Medical School, it was announced recently by Dean Richard H. Young.

The collection was owned by Dr. John Stanley Coulter, former chairman of the Medical School's department of physical medicine, who died in December, 1949.

Dr. Coulter was graduated from the University of Pennsylvania in 1909. In 1926 he was appointed assistant professor in physical medicine in Northwestern's Medical School, rising to a full professorship and chairman of the department in 1943.

The gift will be placed in the Archibald Church Library, one of the five largest medical libraries in the country. At the present time, it contains more than 112,000 volumes as well as 1,000 periodicals.

Society News.—The Chicago Rheumatism Society, was addressed April 26 by Dr. William S. Hoffman, director of biochemistry, Hektoen Institute and Cook County Hospital. His subject was "Biochemical Aspects of Salicylate Therapy."

Summer Camp for Diabetic Children.—A Summer Camp for Diabetic Children will be conducted for the second season under the auspices of The Chicago Diabetes Association, Inc. Because the first season was so successful, a larger group of campers of wider age ranges will be accommodated this year at Holiday Home, Lake Geneva, Wisconsin, from August 8 to August 29. In addition to the regular personnel of the camp, there will be a staff of dietitians and resident physicians, trained in the care of diabetic children, furnished by The Chicago Diabetes Association. Boys and girls, ages eight to fourteen years inclusive, will be accepted at a fee of $120 (which covers three weeks camping and transportation from Chicago). Fee reductions may be arranged according to circumstances. Physicians are requested to notify parents of diabetic children and to supply the names of children who would like to attend. Correspondence should be addressed to The Chicago Diabetes Association, 950 East 59th Street, Chicago 37. Limited capacity requires prompt application. Officers of The Chicago Diabetes Association are Dr. Rollin T. Woodyatt, honorary president; Dr. Authur R. Colwell, president; Dr. Samuel Soskin, first vice-president; Dr. Ford K. Hick, second vice-president; Dr. Henry T. Ricketts, secretary and Paul A. Dice, treasurer. Dr. Alvah L. Newcomb is chairman of the Summer Camp Committee.

St. Luke's Observes Nursing Anniversary.—The sixty-fifth anniversary of the establishment of St. Luke's Hospital School of Nursing was observed May 26 at the John B. Murphy Memorial auditorium with Mrs. Floyd Millis, president of St. Luke's Hospital School of Nursing Alumnae Association, presiding. Speakers were Dr. George K. Fenn, associate professor of medicine, Northwestern University Medical School, and attending physician and director of electrocardiograph laboratory at St. Luke's, who extended the greetings from the medical staff to the graduates of the hospital, and Nellie X. Hawkinson, A. M., chairman, nursing education, division of social sciences, University of Chicago, who spoke on "Education for Nursing." The program included a historical tableaux of the old and new uniforms used at St. Luke's and a demonstration on some of the important current nursing procedures. St. Luke's Hospital School of Nursing is one of the oldest in the midwest. Since 1885, with a class of six students, it has through the years graduated over twenty-four hundred nurses.

Winners in Annual Competition by Internes and Residents.—Harry A. Oberhelman, Jr., resident in surgery, University of Chicago, won first prize of $150 in the Annual Competition by Internes and Residents of Chicago Hospitals, sponsored by the North Shore Branch of the Chicago Medical Society. The title of his paper was "The Relation of Gastric Secretion to the Cause of Death in Pyloric Obstruction." Jason Ned Smith, Jr., intern at St. Luke's Hospital, placed second in the competition, winning $100 for his paper on "Clubbing of Fingers and Hypertrophic Osteoarthropathy." The third prize was $50. Tieing for third place were J. Sterling Martin, resident in medicine, Passavant Hospital, for his work on "Studies of Bone Marrow Function With the Use of Radioactive Phosphorus"; Richard L. Merkel, resident in obstetrics and gynecology, Ravenswood Hospital, for his presentation titled "A Comprehensive Study of Chemical Tests for the Early Diagnosis of Pregnancy, Including a New colorimetric Determination" and Mary R. Richards, assistant resident, Childrens Memorial Hospital, "Pre and Post-operative Growth Patterns in Congenital Heart Disease as Shown by the Wetzel Grid."

Society of Physical Medicine and Rehabilitation Formed.—A representative group of persons interested in physical medicine and rehabilitation gathered together April 19 to organize the Chicago Society of Physical Medicine and Rehabilitation. Dr. Louis B. Newman, chief, physical medicine rehabilitation, VA Hospital, Hines, was elected president; Dr. Charles O. Molander, director, department of physical medicine, Michael Reese Hospital, vice president and Dr. Arthur A. Rodriquez, assistant head of the department of physical medicine and rehabilitation, Research and Educational Hospitals and consulting physiatrist, Illinois Central Hospital, was elected secretary-treasurer. These officers are diplomates of the American Board of Physical Medicine and Rehabilitation. Drs. H. Worley Kendell, Disraeli Kobak and James Case were elected to the Board of Trustees to serve for a period of three, two and one year, respectively. The May 19 meeting was addressed by Dr. Richard Kovacs, New York City, secretary of the American Congress of Physical Medicine Rehabilitation in Organization Work."

CRAWFORD

Society Election.—Dr. A. L. Lowe, Jr. was elected president of the Crawford County Medical Society at a recent meeting. Other officers are Dr. Samuel S. Allen, vice president; Dr. John W. Long, secretary-treasurer; and Drs. G. H. Henry, L. R. Illyes and L. B. Highsmith, censors. Dr. John W. Long, Robinson, was chosen delegate to the State meeting and Dr. Roy Griffy, Oblong, alternate. Dr. Edward Greer, Robinson, spoke at the meeting.

FULTON

Society News.—Dr. Walter C. Humbert, assistant medical director, American Red Cross, addressed the Fulton County Medical Society, April 21, on "Proposed Red Cross Blood Centers" and Dr. E. P. Coleman on "The Acute Abdomen."

HENRY

Personal.—Dr. C. L. Watters, Geneseo, was chosen president of the local Rotary Club, to be installed in July.

KNOX

Society News.—The Knox County Medical Society was recently addressed by Father Michael 1. English, S. J., Regent, Stritch School of Medicine at Loyola University, on "Medical Education Under Private Auspices."

LEE

Personal.—Dr. Charles K. Bush has been appointed superintendent of the Dixon State Hospital where he has been serving since March 1949 as assistant superintendent and then acting superintendent when Dr. Louis Belinson was transferred to the Jacksonville State Hospital.

MACON

Society News.—The Macon County Medical Society was addressed April 18 by Dr. Justin J. Cordonnier, professor of urology, Washington University School of Medicine. His subject was "Carcinoma of the Bladder."

MADISON

Society News.—"Intestinal Obstruction" was the subject discussed by Dr. R. J. Noer, Detroit, assistant professor of surgery, Wayne University College of Medicine, before the Madison County Medical Society, at St. John's Methodist Church, Edwardsville, May 4.

MORGAN

Society News.—The Morgan County Medical Society was the guest of Dr. Louis K. Belinson, superintendent of the Jacksonville State Hospital, at the hospital May 11. Following the dinner a lecture on "Electroencephalography" was presented.

PIKE

Fiftieth Anniversary Celebration.—The golden anniversary of the organization of the Pike-Calhoun County Medical Society was held April 13 at Orr Memorial Hall in Pittsfield. Dr. Sam L. Miller, Hardin, president of the society, presided at the meeting. Dr. Ernest B. Howard, Chicago, assistant secretary, American Medical Association, spoke on the activities of the Association. Dr. E. B. Montgomery of Quincy, ninety-three years of age, said to be the oldest practicing physician in the State of Illinois, also spoke. Other speakers at the meeting were Dr. Walter Stevenson, Quincy, then president of the Illinois State Medical Society, Dr. Harold M. Camp, Monmouth, Secretary, Illinois State Medical Society, and Dr. Robert Malony, Pittsfield.

ROCK ISLAND

Society News.—Dr. Peter Rosi, Chicago, assistant professor of surgery, Northwestern University Medical School, discussed "How Radical Should a Resection be for Cancer of the Colon?" before the Rock Island County Medical Society at its meeting May 9.

SALINE

Society News.—Dr. Edward W. Massie, St. Louis, addressed the Saline County Medical Society recently on "Acute Cardiovascular Emergencies."

SANGAMON

Bulletin Devoted to State Meeting.—The Bulletin of the Sangamon County Medical Society for May, 1950, was marked as a "Welcome to Springfield" to the officers, delegates and guests of the Illinois State Medical Society for the Annual Meeting of the Society, May 23-24-25. The issue was devoted to the program, historical information, biographic reports of the officers, committees and general activities of other groups meeting during the session. This 1950 session was the first time since 1942 that Springfield had been host to the annual meeting of the State Society which, this year, was designated as The Andy Hall Meeting.

Society News.—"Management of Post-Menopausal Bleeding" was the title of a talk before the Sangamon County Medical Society May 4 by Dr. John Brewer, Chicago.

Physicians Honored.—Drs. Charles Compton and Oscar F. A. Maxon, both of Springfield, were presented with Fifty Year Emblems and Certificates by Dr. Andy Hall, Mount Vernon, during the Annual Meeting of the Illinois State Medical Society.

WINNEBAGO

Personal.—Dr. Ward Burdick was inducted into his new post as county physician at the annual meeting of the Winnebago County Hospital recently. Dr. Burdick succeeds Dr. L. S. Greenwood who resigned. Other officers of the hospital chosen at the meeting were Dr. Roland Pritikin, president; Dr. B. C. Schnell, Jr., vice president and Dr. Eric Lofgren, secretary.

HEALTH DEPARTMENT ACTIVITIES

Vital Statistics and Standard Time.—Life officially begins and ends on standard time in Illinois.

"Residents of the approximately 500 Illinois communities where clocks were set ahead one hour to conform with daylight-saving time on April 30 should remember that the hour of birth or death set down on official certificates must be reckoned under standard time," Dr. Roland R. Cross, state Director of Public Health said recently.

The directive that hours of birth and death be listed under standard time is based on an opinion of the Attorney General of Illinois, originally issued in 1924 and reaffirmed in 1936.

Report on Tuberculosis.—The ceaseless drive against tuberculosis waged by local tuberculosis sanitariums, local and state voluntary tuberculosis

associations and the state Department of Public Health has resulted in "remarkable and substantial gains" against this disease, Dr. Roland R. Cross, state health director, stated recently.

A special report just compiled by the state Division of Vital Statistics shows that seven Illinois counties reported no deaths from tuberculosis in 1948. During the same year, 16 counties reported only one death each from this disease.

Putnam county reported no tuberculosis deaths during 1946, 1947 and 1948, while Schuyler county reported none in both 1947 and 1948. Other counties reporting no deaths from tuberculosis in 1948 are Calhoun, Edwards, Hamilton, Jersey and Wabash.

The report, which traced tuberculosis mortality from 1945 to 1948 inclusive, showed a steady decline in deaths from this cause. While 3,159 persons in the state died from tuberculosis in 1945, the 1948 figure dropped to 2,657.

By far the greatest number of deaths occurred among persons 40 years of age and older, Dr. Cross asserted. Statistics show that 1,497 of the 1948 tuberculosis deaths occurred in the 45 and older age bracket. This disease caused 864 deaths among persons 25 to 44, while less than 300 of the reported tuberculosis deaths were among those under 25.

Urge Vaccination Against Smallpox.—Dr. Leonard M. Schuman, chief of the Division of Communicable Diseases, urged smallpox re-vaccination every three to five years to "maintain a high level of immunity among all age-groups and totally prevent the disease."

Pointing to recent smallpox outbreaks of epidemic proportions in India, Chile and Scotland, Dr. Schuman said: "We must recognize the ease with which cases may be imported with the speed of modern travel."

He emphasized that a smallpox vaccination in childhood does not protect a person for life. There is a steady decline in immunity following the vaccination, and a large percentage of persons have lost a good share of protection in five to ten years.

"We must maintain our immunity against smallpox by repeated vaccination to eradicate this disease and be secure against its re-introduction into communities," Dr. Schuman asserted.

No case of smallpox has been reported to the Illinois Department of Public Health since 1947, and no death from this disease has occurred in the state in the last 11 years.

Changes in Staff.—Dr. John B. Hall has been appointed director of the Cook County Department of Public Health. Dr. Edward E. Piszczek, who resigned, became tuberculosis controller of the Suburban Cook County Sanitorium District. Dr. Hall has been a member of the Cook County staff since 1941.—Dr. Fred P. Long has been appointed commissioner of health of the Peoria City Health Department. He formerly served as director of the Lincoln-Lancaster County Health Department at Lincoln. In 1946-1947, he was chief of the Nebraska State Health Department's division of communicable disease.—Dr. Roger F. Sondag has been named director of the new Jackson County Health Department. Recently he served as director of the Bureau of Preventable Diseases of the Florida Board of Health.

GENERAL

National CARE Week.—May 1-7 was designated "National CARE Week" throughout the country coinciding with the fourth anniversary of CARE'S first package delivery at Le Havre, France, May 9, 1946. Since then over 9,000,000 parcels have been delivered to twenty-two countries. Service to some of those countries, Eire, Bulgaria, Hungary, Roumania and Poland, have since been discontinued at the governments' request. European countries now served are Austria, Belgium, Czechoslovakia, Finland (France, Great Britain, both eastern and western Germany, Greece, Italy, the Netherlands, Norway and Malta. In addition to order deliveries, CARE, as a non-profit agency, ploughs back all surplus funds into additional gifts for free distribution by overseas representatives of its twenty-six American member welfare agencies. To date, $2,137,592 worth of "free" packages have been distributed in this way.

Physician Honored.—Dr. Lester R. Dragstedt, chairman of the department of surgery, University of Chicago School of Medicine, was recently elected to the National Academy of Sciences, Washington, D. C. Dr. Dragstedt, whose vagatomy operation for gastroduodenal ulcers, discovery of lipocaic, and studies on the function of the pancreas are famous in surgical history, became chairman of the university's department of surgery in 1947, the same year that he received the silver medal of the American Medical Association and the gold medal of the Chicago Medical Society for his discovery of gastric vagatomy.

Eli Lilly Host to Medical School.—Students and members of the faculty of the Chicago Medical School were guests of the Eli Lilly and Company on a tour of their plant recently. The tour included an inspection of the laboratories including the Research Laboratories, replica of the original laboratories and the Biological Laboratories at Greenfield, Indiana, where demonstrations were made showing the production of biological products.

Knudsen Award Goes to Dr. Holmblad.—Dr. Edward Charles Holmblad, treasurer and managing director of the American Association of Industrial Physicians and Surgeons, has been given the Knudsen Award. This is a medal of high honor in industrial medicine and is given to the practitioner making the outstanding contribution in the industrial field. Dr. A. G. Kammer, dean of the University of Pittsburgh School of Occupational Medicine, was chosen president-elect of the association and Dr. E. H. Carleton, medical director of Inland Steel Company, was installed as president.

MARRIAGES

Dr. Robert J. Schmitt, Chicago Heights, to Miss Shirley Burns, Michigan City, Ind., April 15.

Dr. John Peter Igini, Chicago, to Miss Jane Maren Stromsen of Oak Park, recently.

DEATHS

HENRY WILLIAM BERARD, retired, Chicago, who graduated at the University of Illinois College of Medicine in 1894, died April 29, aged 83. He had practiced medicine on Chicago's northwest side for over 50 years.

CLARENCE T. CARR, LaGrange, who graduated at Hering Medical College, Chicago, in 1902, died March 28, aged 72.

NUNZIO T. CERASA, Peru, who graduated at Chicago Medical School in 1946, died suddenly, April 27, aged 40.

HOMER O. DOLLEY, Bloomington, who graduated at Northwestern University Medical School in 1929, died suddenly, March 25, aged 49.

AARON S. ESHBAUGH, retired, Kankakee, who graduated at Hahnemann Medical College and Hospital in 1886, died April 19, aged 91. He had practiced medicine in Kankakee for 51 years.

IRENAEUS L. FOULON, East St. Louis, who graduated at Washington University School of Medicine, St. Louis, in 1915, died April 17, aged 61. He had served as president of the St. Clair County Tuberculosis Association and of St. Clair County Medical Society.

JOHN ROBERT GOODFELLOW, retired, Aurora, who graduated at Queen's University Faculty of Medicine, Kingston, Ontario, in 1904, died at Copley Memorial Hospital, April 19, aged 79.

FRANK GREEN, CHICAGO, graduated at the University of Illinois College of Medicine in 1935, died in his home, April 30, aged 40.

JAMES B. HARNEY, Chicago, who graduated at Chicago College of Medicine and Surgery in 1915, died April 25, in New Orleans, aged 70.

DALE E. HAWORTH, Beardstown, who graduated at Bennett Medical College, Chicago, in 1915, died April 7, aged 56. He was physician for the Chicago, Burlington and Quincy Railroad and served for many years as Health Officer of Beardstown.

JEFFERSON H. HEITMAN, Tioga, who graduated at Barnes Medical College, St. Louis, Mo., in 1899, died suddenly, March 28, aged 76.

JOHN A. KOCH, retired, Danville, who graduated at George Washington University School of Medicine in 1897, died April 20, aged 76.

GUY M. LANGSDALE, Lexington, who graduated at Chicago College of Medicine and urgery in 1911. died in Brokaw hospital, Normal, April 24, aged 67.

PETER J. LATZ, Chicago, who graduated at Dunham Medical College, Chicago, in 1896 and Jenner Medical College in 1899, died April 14, aged 90. He had been on the staffs of Alexian Brothers and St. Elizabeth Hospitals.

ROLLA E. LITTLE, East St. Louis, who graduated at St. Louis University School of Medicine in 1906, died April 1, aged 71.

FRANK E. MCCORD, Jacksonville, who graduated at Gross Medical College, Denver, Colo., in 1898, died April 10, aged 74. He was Health Officer for Morgan County for the last 7 years.

BENNETT R. PARKER, Chicago, who graduated at Rush Medical College in 1916, died April 15, aged 60.

JOHN R. POLLOCK, Quincy, who graduated at Barnes Medical College, St. Louis, Mo., died April 22, aged 70.

ALBERT C. PURCELL, Streator, who graduated at Rush Medical College in 1905, died April 24, aged 70.

JOSEPH C. ROSS, Chicago, who graduated at Bennett Medical College, Chicago, in 1915, died March 26, aged 58. He had practiced medicine on Chicago's northwest side since graduation and was an alderman of the 40th ward.

WILLIAM A. SKEELE, Alton, who graduated at Northwestern University Medical School in 1932, died April 23, while returning from a vacation. He was 43.

ALBERT JOHN STOKES, Chicago, who graduated at Bennett College of Eclectic Medicine and Surgery, Chicago, in 1914, died March 14, aged 63, of cerebral hemorrhage.

HARLEY YANDELL, Springfield, who graduated at St. Louis University School of Medicine in 1911, died February 22, aged 65.

"FOR THE COMMON GOOD"

Health Talk Features Institute of Education by Radio.—On May 6, the Health Talk, "Guardians of Your Sleep" was telecast over WBNS-TV, Columbus, Ohio, as a special session of the Annual Institute for Education by Radio. The Educational Committee of the Illinois State Medical Society was invited to present this pioneer telecast by the Ohio State Medical Association which, this year, took over the health workshop incident to the Institute. Dr. Jonathan Forman was in charge. Abbott Laboratories provided the transportation of the Chicago "cast." The Ohio Chemical Company, through its local dealers, Columbus Hospital Supply Company and the Wendt-Bristol Company, provided equipment, and Dr. Robert Zollinger, professor and head of the department of surgery, Ohio State University College of Medicine, made available Miss Sarah Timms, RN., Surgical Supervisor, Surgical Pavilion, Ohio State University Hospital, for the telecast. Both Dr. Zollinger and Miss Timms provided gowns and other equipment.

As in the original telecast in Chicago over WGN-TV, the "patient" stole the show. The "patient" was Mr. Edward Pelikan, senior pharmacology student at the University of Illinois. Other Chicago participants were Drs. Max S. Sadove, head of the division of anesthesiology, University of Illinois College of Medicine; James H. Cross, clinical assistant in surgery, University of Illinois College of Medicine; Dr. Allan Talbot, resident in anesthesiology, V.A. Hospital, Hines; Theodore R. Van Dellen, Medical Editor of the Chicago Tribune, and assistant dean, Northwestern University Medical School.

All in all "Guardians of Your Sleep" in Columbus over WBNS-TV was a success.

Since the last issue of the Illinois Medical Journal the following telecasts have been presented:

"The Rh Factor", April 10, Israel Davidson showing the tests used in the proper blood matching and interviewing a real patient.

"Metal in Your Bones", April 17, with Joseph Farrington demonstrating all the metal appliances used in fracture repair.

"Your Heart's Story", April 24 with Andrew C. Ivy and Louis R. Krasno in a fluroscopic demonstration, together with an explanation of the flicker photometer as a research procedure.

Health Talk on Television took a two weeks' vacation, and returned to the air May 15.

Radio

Your Doctor Speaks over FM Station WFJL carried the following physicians in transcribed talks:

Theodore R. Van Dellen, May 11, Rheumatic Fever.

Louis Tavs, May 18, Care of the Skin.

Fred Hein, Ph.D., Exercise.

Lectures Arranged Through the Educational Committee of the Illinois State Medical Society:

William D. Larson, Annawan, Princeton Council Parents and Teachers, in Princeton, May 2, on Health of the School Child.

Franklin Corper, Leander Stone School in Chicago, May 8, on Importance of Good Posture.

Robert H. Sykes, Geneva, Washburne Trade School, May 9, in Chicago, Playing the Game of Life.

Robert Hagan, McKay Elementary School in Chicago, May 9, on Keeping Solid with Health.

W. W. Bolton, Yale School, May 9, on Timely Tips on Health.

Jerome H. Diamond, Hayt Elementary School in Chicago, May 10, on Building Body Bones and Beauty.

Arthur W. Fleming, Hyde Park High School in Chicago, May 11, on Teen Age Tips on Health.

John P. Coughlin, Frank W. Reilly School, in Chicago, May 11, an Keeping Solid with Health.

Ralph Spaeth, Parker High School in Chicago, May 11, on Teen Age Tips on Health.

Joseph T. O'Neill, Ottawa, Plumb School PTA in Streator, May 11, on Your Child's Health.

Emerson K. McVey, Lowell Girls Club in Harvey, May 17, on Understanding the Adolescent.

Margaret M. Scannell, Peck PTA in Chicago, May 17, on Common Childhood Diseases.

Walter S. Priest, Women of the Moose in Chicago, May 19, on Heart Disease.

Vernon DeYoung, The Twig Benders in Homewood, June 12, on Building Sound Health Attitudes in Children.

Lectures Arranged Through the Scientific Service Committee of the Illinois State Medical Society;

H. Close Hesseltine, Chicago, McDonough County Medical Society in Macomb, April 28, Therapeutic Advances in Obstetrics.

Joseph N. Rappaport, Evanston, Livingston County Medical Society in Pontiac, on Growing Up with Your Children.

Thomas D. Masters, Springfield, Effingham County Medical Society in Effingham, May 11, on Metabolic Bone Disease.

William W. Bauer, Ryburn Hospital in Ottawa, May 28, on Satisfactions in Service.

Philip Thorek, Chicago, Effingham County Medical Society, in Effingham, June 8, on Abdominal Surgery.

Health Talk:—The Secretary of the Educational Committee won first place in the publicity section of the Illinois Woman's Press Association contest recently with the Health Talk titled "Try Laughing."